1170 Frequency Response Analyser

SERVICING MANUAL

Volume 2

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Introduction to the Servicing Manual

As the 1170 Series Frequency Response Analyser requires virtually no routine servicing, this manual is primarily intended to assist the Service Technician in the task of fault diagnosis and rectification.

Module Identification

An instrument is identified by the type number of its Generator Assembly, which is a plug-in module to the 1170 Analyser.

It will be noted that this Servicing Manual makes little reference to the Type 1177. Users of this type of instrument should note that the boards and assemblies used in the 1177 are identical to those of the 1172 and are therefore identified as such.

The Mainframe of the 1170 Analyser is common to all models.

Arrangement of the Manual

The manual is divided into two main sections as follows:-

1. **The Functional Description**

   This section includes the technical description, the circuit diagrams and the use of special diagnostic equipment for fault finding.

2. **The Physical Desciption**

   This section includes a description of the assembly of the instrument, parts lists and component layout diagrams for the pcb's and a list of all the common connections throughout the instrument.

A separate manual contains the equivalent information for the peripheral units which occupy positions 18 to 22 of the 1170.

The relationship between the circuit diagrams and the printed circuit boards is shown in the 1170 Circuit Diagram Allocation Chart which is produced in both Section 1 and Section 2.

This chart also defines the functional areas of the instrument.

LED DISPLAY ASSEMBLY

An updated display assembly with LED's, consisting of pcb's 49 and 50, is fitted to later models (from Serial No. 201006 for 1172/77's and from Serial No. 000181 for 1174's). The new assembly supersedes the original type having neon indicators. Both types are interchangeable; they have identical display capabilities and mate internally with the same two edge connector sockets SKM and SKN.

The pcb's comprising the original type (29, 30, 33, 36-40) each contain a mixture of neon indicators and logic circuitry. Circuit functions on the new type of display assembly are clearly divided; pcb 49 (a full-width pcb) contains most of the logic and mates with both SKM and SKN, pcb 50 contains the LED's and some logic.

Circuit diagrams and information on the original display assembly have been retained in this manual for servicing purposes. Certain references in the text, and in Figs 2.2.2 and 2.2.3, to the original assembly/pcb's will not be applicable if the new display assembly is fitted.

Circuit diagrams for the new assembly appear in circuits '76' and '77'; circuit descriptions are on facing pages. The parts list and component layout for pcb's 49 and 50 are shown on pages 2.3.129 and 2.3.130 respectively.

SECTION 2 Physical Description

This section of the Servicing Manual is divided into three sub-sections, namely:-

2.2 Unit Layout

2.3 PCB Information

2.4 Interconnection List

Each sub-section begins with an introduction which includes a list of its contents.

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	1170 Series List	
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2.2 Unit Layout

The assembly arrangement of the complete instrument is shown in Fig. 2.2.1. The other figures, which form the bulk of this sub-section, are developed from this drawing.

The purpose of this sub-section is to assist the reader to locate any particular pcb, sub-unit or connector within the instrument.

It must be remembered that the pcb's of the Mainframe, 1170 are identified separately from the generator 1172. It will be noted that throughout this manual the boards are numbered by board and unit, i.e. pcb 16 of 1170. This distinquishes it from pcb 16 of the generator, 1172 or 1177, which is numbered pcb 16 of 1172.

The last diagram in this sub-section is the 1170 Circuit Allocation Chart. This chart which is a reprint of that in Section 1.3, is used to provide the link between the Functional circuit diagrams in Section 1 and the Physical description of Section 2.

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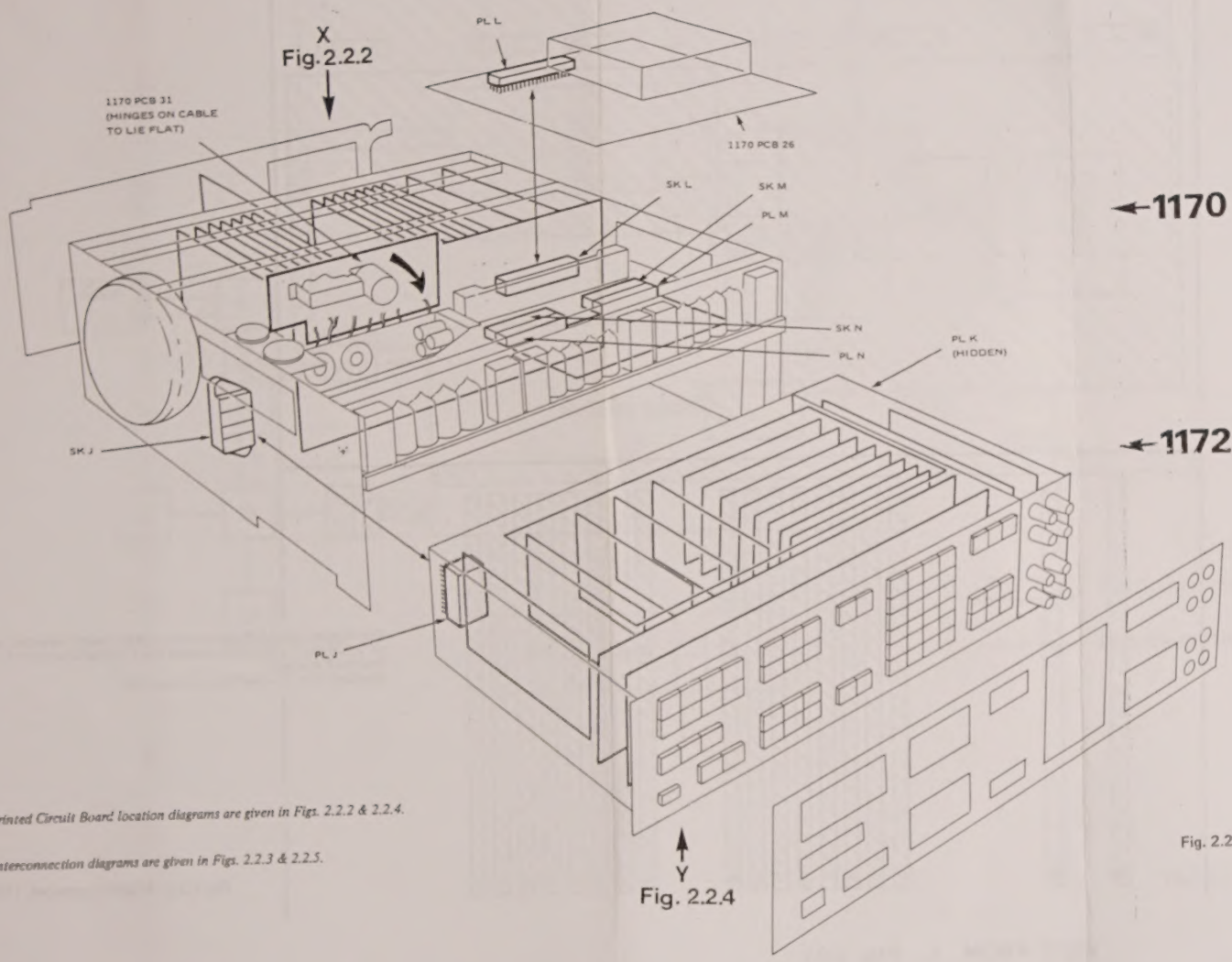


←1170

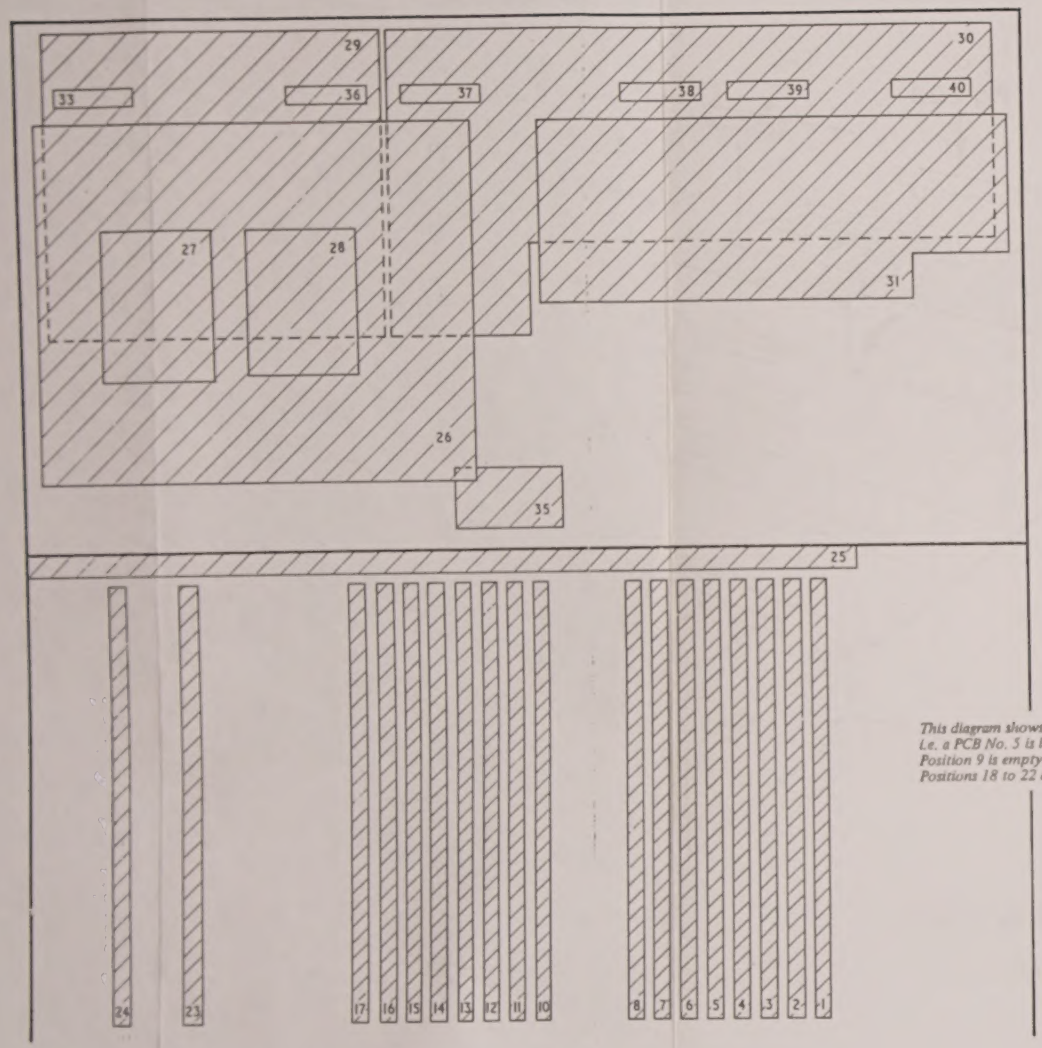
←1172/1177

Printed Circuit Board location diagrams are given in Figs. 2.2.2 & 2.2.4.

Interconnection diagrams are given in Figs. 2.2.3 & 2.2.5.

Fig. 2.2.1 General Arrangement

FRONT



HIDDEN EXTENT OF BOARDS 29 AND 30

PCB'S CROSS HATCHED

This diagram shows PCB positions and not necessarily the actual boards, i.e. a PCB No. 5 is located in position 5 and another in position 6.
Position 9 is empty.
Positions 18 to 22 accept the peripheral units.

Fig. 2.2.2 PCB Arrangement, 1170

VIEW FROM X, Fig. 2.2.1

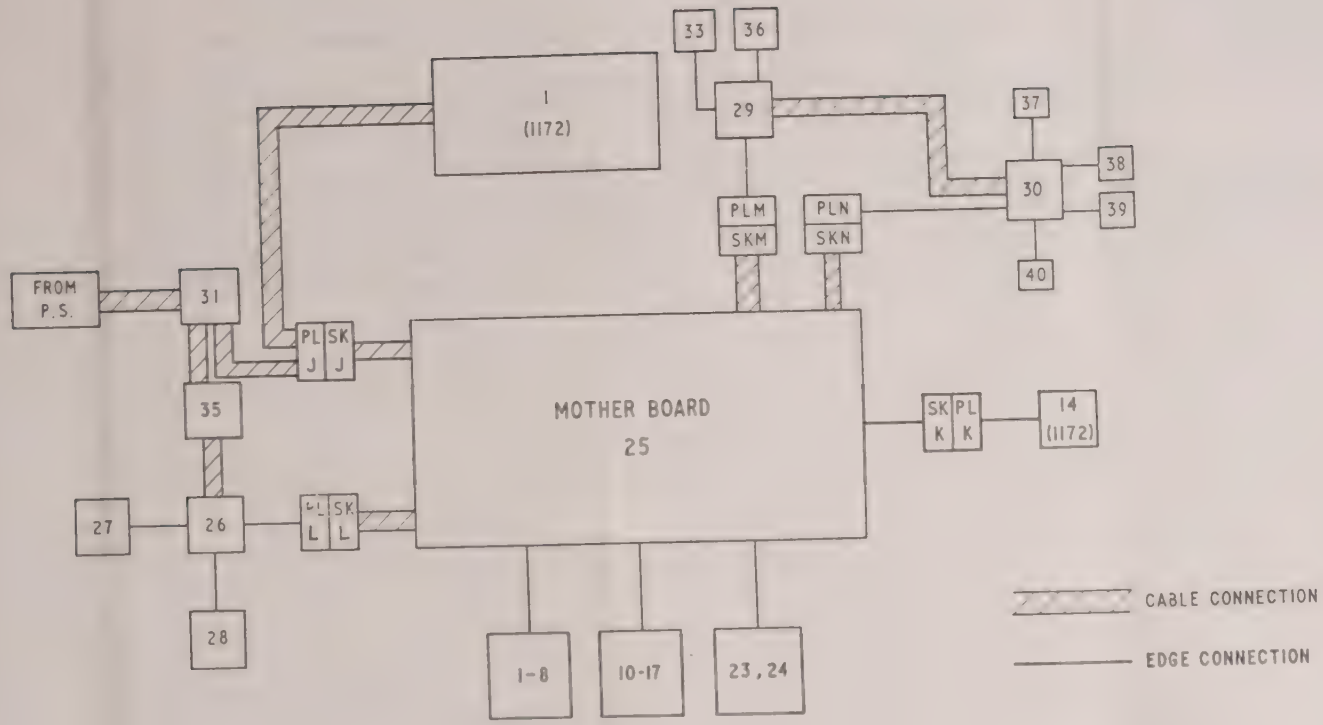
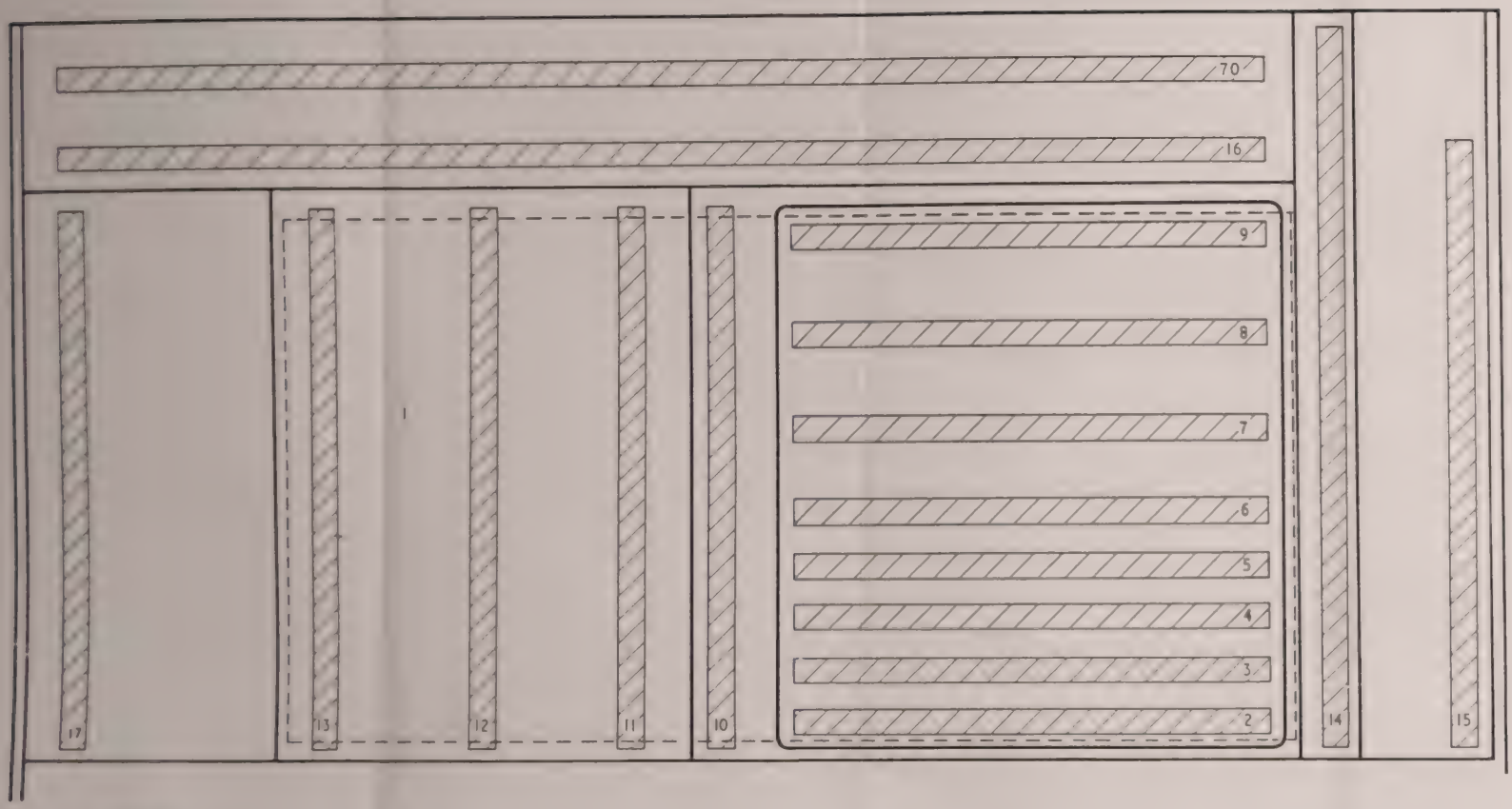


Fig. 2.2.3 1170 Interconnection Diagram



VIEW FROM Y, Fig. 2.2.1

Fig. 2.2.4 PCB Arrangement 1172

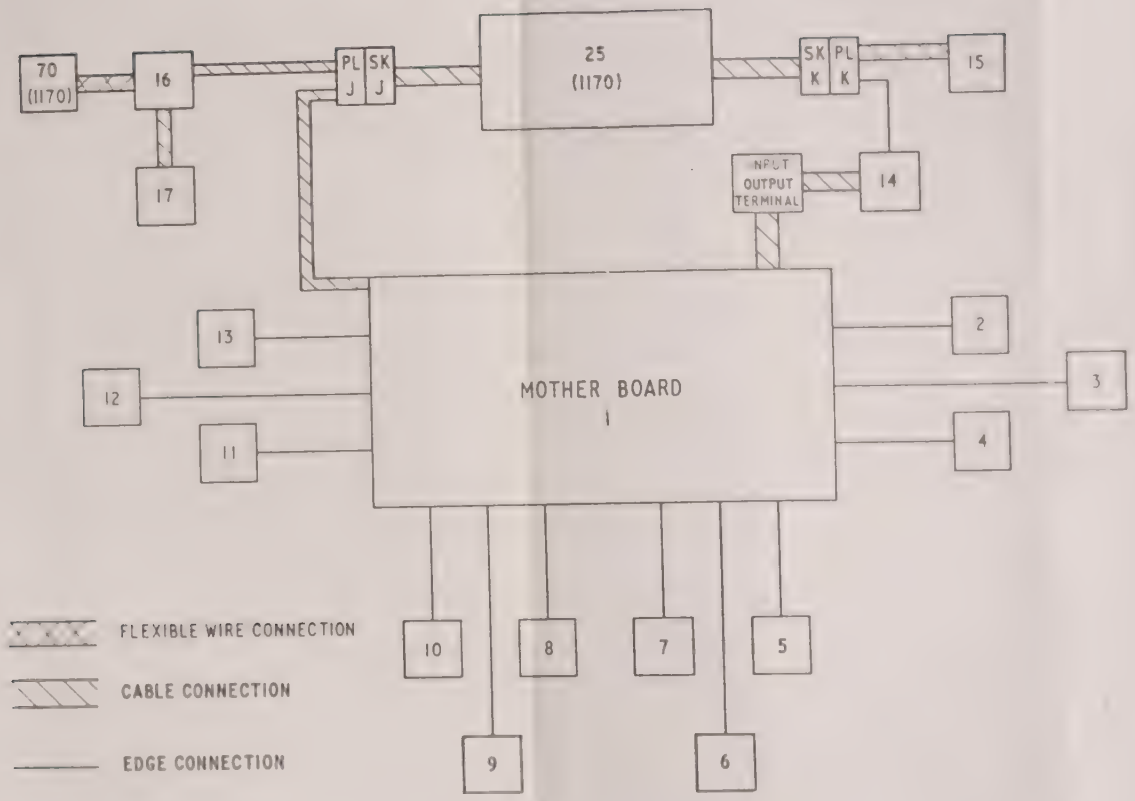


Fig. 2.2.5 1172 Interconnection Diagram

2.3 PCB Information

This sub-section presents the following information:-

1. Component parts lists for each pcb.

2. Connection lists (with signal names and numbers, allowing reference to the main list in section 2.4) for each pcb and plug/socket.

3. Component layout diagram for each pcb.

CONTENTS

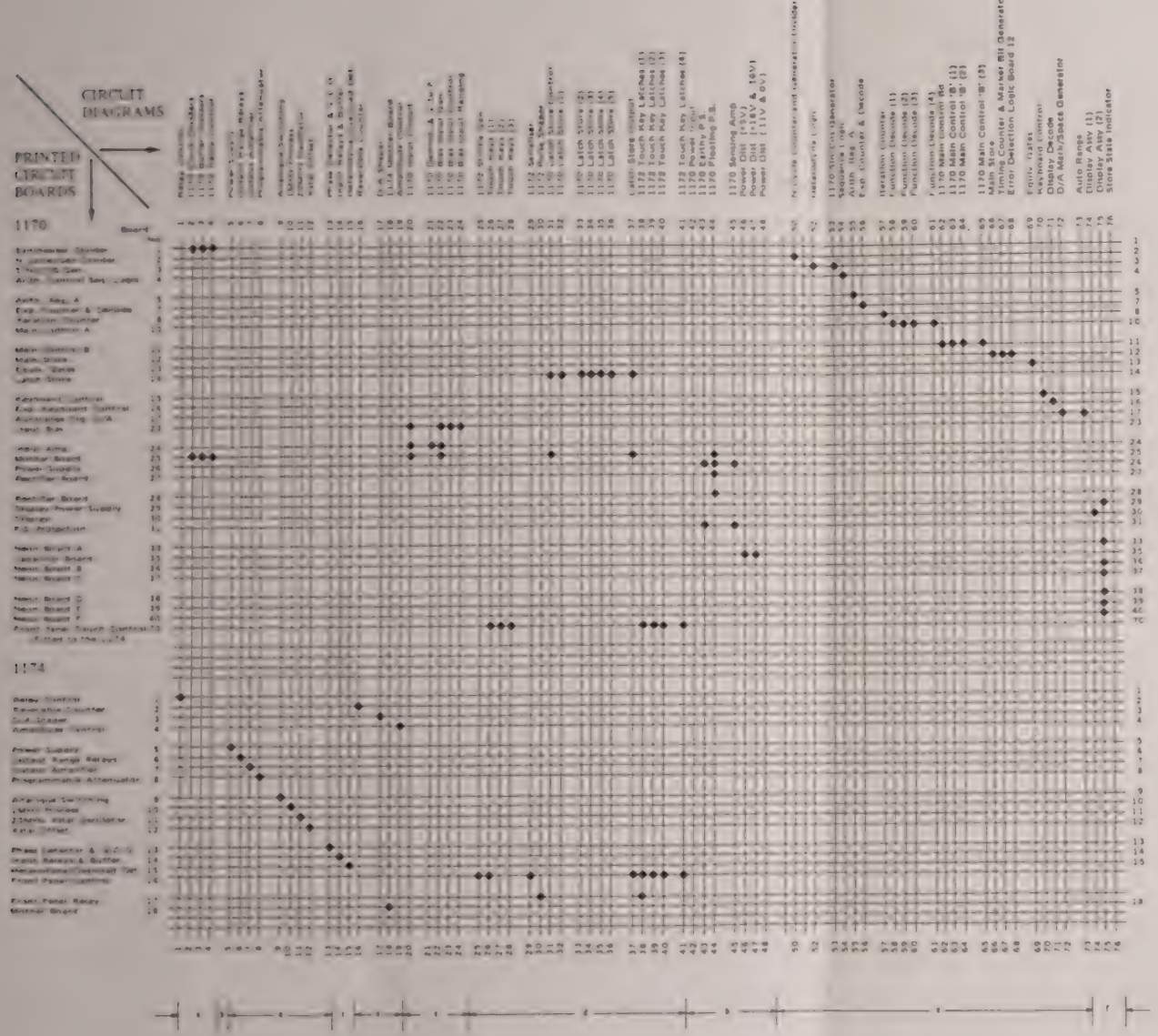
The pages in this section are arranged in numerical order of the printed circuit boards.

Plug and socket lists are shown on adjacent pages to those giving other information relating to the pcb to which they are fitted.

The edge connector lists for pcb's and plug/socket make reference to the interconnection list given in full in sub-section 2.4, so enabling quick reference to all other terminals common to a particular connection.

Edge connector lists for pcb positions 18 to 22 are shown on pages close to the layout illustration for pcb No. 25, the motherboard. These lists will be in the peripherals manual, in the section devoted to the unit intended for insertion into the appropriate position.

The edge connector list for pcb position No. 9 is included close to the pcb No. 25 layout diagram. The reason for this is that the position is unoccupied but may be used for later modification.



This chart shows the relation between the printed circuit boards and the circuit diagrams of the 1174.

The board numbers are repeated on the right-hand side of the chart for convenience and likewise the circuit numbers at the bottom of the chart.

The main purpose of the chart is to allow easy cross-reference between the circuit diagrams in Section 1 of the Servicing Manual and the pcb information in Section 2.

The spots indicate which numbers of circuit diagrams should be consulted for each pcb. For instance, the chart shows that the circuit diagram of board 10 of the 1170 will be found on circuits no. 58 to 61.

The major functional areas of the instrument are broadly indicated by the following key.

a GENERATOR
b POWER SUPPLIES
c INPUT SYSTEM
d SELECT LATCHING
e DIGITAL SECTION
f DISPLAY

1174
CIRCUIT DIAGRAM
ALLOCATION CHART

The key to abbreviations used in the parts lists is given below.

COMPONENT PARTS LIST ABBREVIATIONS

CIRCUIT REFERENCES

AE	Aerial
B	Battery
C	Capacitor (μF)
CSR	Thyristor
D	Diode
FS	Fuse
IC	Integrated Circuit
L	Inductor
LP	Lamp (including Neon)
LK	Link
M	Motor
ME	Meter
MSP	Mains Selector Panel
PL	Plug
R	Resistor (Ω)
RE	Recording Instrument
RL	Relay
S	Switch
SK	Socket
T	Transformer
TP	Terminal Post (or Test Point)
TR	Transistor
V	Valve
X	Other Components

Also Used:-

RNL	Non Linear Resistor (Ω)
RV	Variable Resistor (Ω)

COMPONENT TYPES

Fixed Resistors

Carbon Composition	CACP
Carbon Film	CAFM
Cracked Carbon	CKCA
Metal Film	MEFM
Metal Oxide	MEOX
Power Wirewound	POWW
Precision Wirewound	PRWW
Temperature Sensitive	TEMP
Thick Film	TKFM
Thin Film	TNFM
Voltage Sensitive	VOLT

Variable Resistors

Carbon Front Panel Multiturn	CAFM
Carbon Front Panel Single Turn	CAFS
Carbon Preset Multiturn	CAPM
Carbon Preset Single Turn	CAPS
Cermet Front Panel Multiturn	CMFM
Cermet Front Panel Single Turn	CMFS
Cermet Preset Multiturn	CMPM
Cermet Preset Single Turn	CMPS
Wirewound Front Panel Multiturn	WWFM
Wirewound Front Panel Single Turn	WWFS
Wirewound Preset Multiturn	WWPM
Wirewound Preset Single Turn	WWPS

Capacitors

Air	AIR
Aluminium Electrolytic	ALME
Aluminium Solid	ALMS
Polycarbonate	CARB
Ceramic	CERM
Polyester Foil	ESTF
Polyester Metallised	ESTM
Glass	GLAS
Mica	MICA
Metallised Lacquer	MLAC
Paper Foil	PAPF
Paper Metallised	PAPM
PTFE	PTFE
Polypropylene Film	PYLN
Polystyrene	STYR
Tantalum Dry	TAND
Tantalum Foil	TANF
Tantalum Wet	TANW

Order of pages

pcb/unit	Information	pcb/unit	Information
1170		1170	
pcb 1	Parts list	pcb 15	Parts list
pcb 1	Edge connectors	pcb 15	Edge connectors
pcb 1	Layout	pcb 15	Layout
pcb 2	Parts list	pcb 16	Parts list
pcb 2	Edge connectors	pcb 16	Edge connectors
pcb 2	Layout	pcb 16	Layout
pcb 3	Parts list	pcb 17	Parts list
pcb 3	Edge connectors	pcb 17	Edge connectors
pcb 3	Layout	pcb 17	Calibration detail
pcb 4	Parts list	pcb 17	Layout
pcb 4	Edge connectors	pcb 23	Parts list
pcb 4	Layout	pcb 23	Edge connectors
pcb 5	Parts list	pcb 23	Calibration detail
pcb 5	Edge connectors	pcb 23	Layout
pcb 6 (position)	Edge connectors	pcb 24	Parts list
pcb 5	Layout	pcb 24	Edge connectors
pcb 7	Parts list	pcb 24	Calibration detail
pcb 7	Edge connectors	pcb 24	Layout
pcb 7	Layout	pcb 25	Disconnect Pins
pcb 8	Parts list	PL/SK J	Pins
pcb 8	Edge connectors	PL/SK K	Pins
pcb 8	Layout	pcb 9 (position)	Edge connectors
pcb 10	Parts list	pcb 18 (position)	Edge connectors
pcb 10	Edge connectors	pcb 19 (position)	Edge connectors
pcb 10	Layout	pcb 20 (position)	Edge connectors
pcb 11	Parts list	pcb 21 (position)	Edge connectors
pcb 11	Edge connectors	pcb 22 (position)	Edge connectors
pcb 11	Layout	pcb 25	Layout
pcb 12	Parts list	pcb 26	Parts list
pcb 12	Edge connectors	PL/SK L	Pins
pcb 12	Layout	pcb 26	Calibration detail
pcb 13	Parts list	pcb 26	Layout
pcb 13	Edge connectors	pcb 27 & 28	Parts list
pcb 13	Layout	pcb 27 & 28	Layout
pcb 14	Parts list	pcb 29	Parts list
pcb 14	Edge connectors	PL/SK M	Pins
pcb 14	Layout	pcb 29	Layout

pcb/unit	Information
1170	
pcb 30	Parts list
PL/SK N	Pins
pcb 30	Layout
pcb 31	Parts list
pcb 31	Layout
pcb 33 & 35	Parts list
pcb 33 & 35	Layout
pcb 36 & 37	Parts list
pcb 36 & 37	Layout
pcb 38 & 39	Parts list
pcb 38 & 39	Layout
pcb 40	Parts list
pcb 40	Layout
pcb 70	Parts list
pcb 70	Layout
1172/1177	
pcb 1	Parts list
pcb 1	Disconnect Pins
pcb 1	Layout
pcb 2	Parts list
pcb 2	Edge connectors
pcb 2	Calibration detail
pcb 2	Layout
pcb 3	Parts list
pcb 3	Edge connectors
pcb 3	Layout
pcb 4	Parts list
pcb 4	Edge connectors
pcb 4	Calibration detail
pcb 4	Layout
pcb 5	Parts list
pcb 5	Edge connectors
pcb 5	Calibration detail
pcb 5	Layout

pcb/unit	Information
1172/1177	
pcb 6	Parts list
pcb 6	Edge connectors
pcb 6	Calibration detail
pcb 6	Layout
pcb 7	Parts list
pcb 7	Edge connectors
pcb 7	Calibration detail
pcb 7	Layout
pcb 8	Parts list
pcb 8	Edge connectors
pcb 8	Calibration detail
pcb 8	Layout
pcb 9	Parts list
pcb 9	Edge connectors
pcb 9	Calibration detail
pcb 9	Layout
pcb 10	Parts list
pcb 10	Edge connectors
pcb 10	Layout
pcb 11	Parts list
pcb 11	Edge connectors
pcb 11	Layout
pcb 12	Parts list
pcb 12	Edge connectors
pcb 12	Calibration detail
pcb 12	Layout
pcb 13	Parts list
pcb 13	Edge connectors
pcb 13	Calibration detail
pcb 13	Layout
pcb 14	Parts list
pcb 14	Layout
pcb 15	Parts list
pcb 15	Layout
pcb 16	Parts list
pcb 16	Layout
pcb 17	Parts list
pcb 17	Layout

PARTS LIST, 1170 PCB No. 1

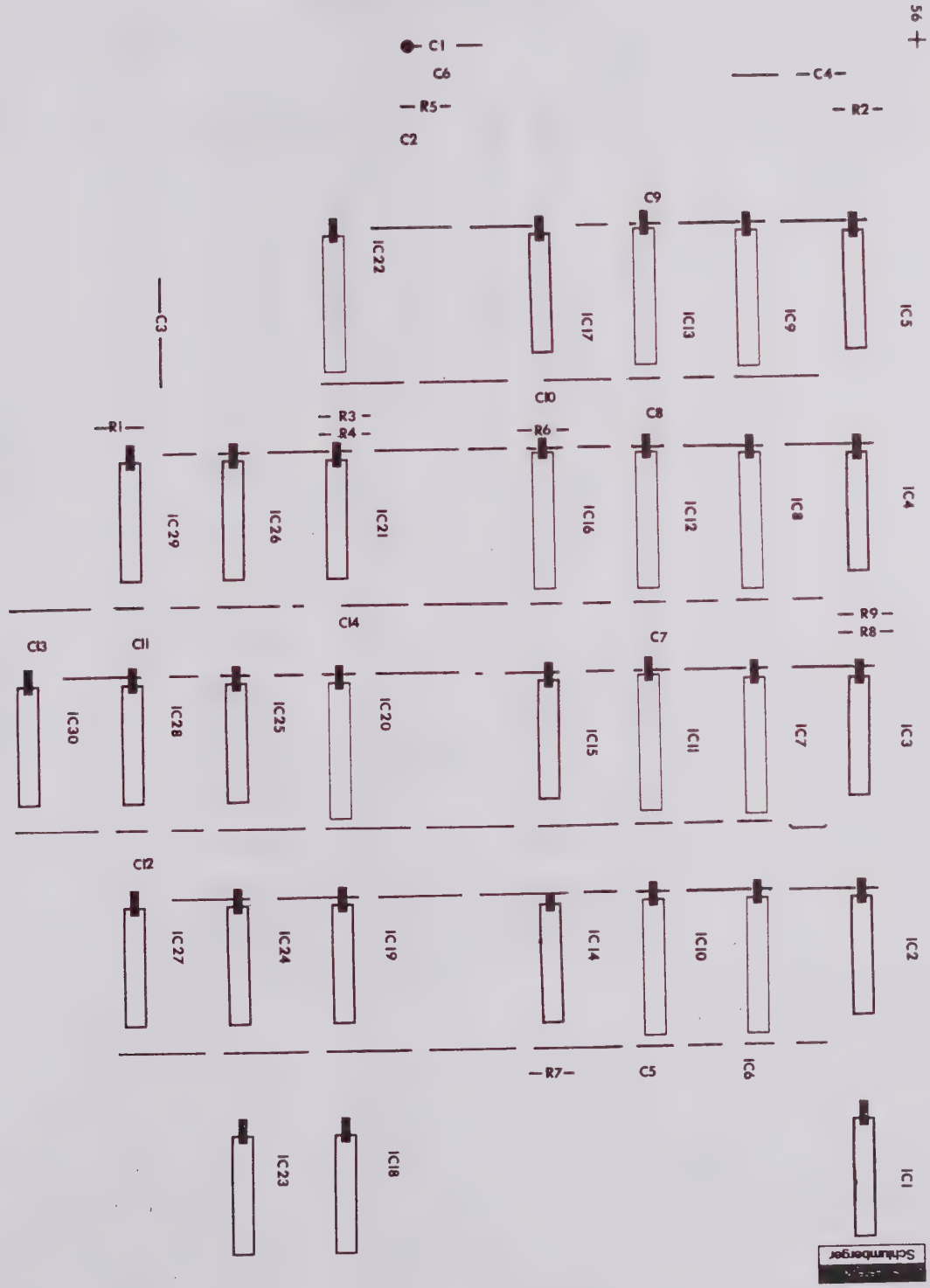
Printed Circuit Board A1709101
(Synthesizer Divider)

Cct Ref.	General Description				Solartron Part No.
R1	CACP	10k	1/8W	10%	172041000
R2	CACP	10k	1/8W	10%	172041000
R3 to R5	CACP	1k	1/8W	10%	172031000
R6	CACP	4.7k	1/8W	10%	172034700
R7 to R9	CACP	1k	1/8W	10%	172031000
R10	CACP	2200	1/8W	10%	172032200
R11	CACP	2200	1/8W	10%	172032200
C1	TAND	33	10V	20%	265473300
C2	CERM	0.047	25V	20%	241944700
C3	ESTM	0.022			225442200
C4	ESTM	0.022			225442200
C5 to C14	CERM	0.01			241941000
C15	CERM	150p	500V	20%	241321500
IC1	SN7404N				510000410
IC2	SN7420N				510000380
IC3	SN7410N				510000420
IC4	SN7406N				510000760
IC5	SN74121N				510000530
IC6 to IC9	SN7475N				510000350
IC10 to IC13	SN74192N				510000990
IC14	SN7410N				510000420
IC15	SN74S74N				510002020
IC16	SN74192N				510000990
IC17	SN7400N				510000340
IC18	SN7490N				510000280
IC19	SN74S10N				510002670
IC20	SN7476N				510000500
IC21	SN7400N				510000340
IC22	SN7475N				510000350
IC23 to IC25	SN7490N				510000280
IC26	SN7404N				510000410
IC27	SN7490N				510000280
IC28	SN7490N				510000280
IC29	SN74121N				510000530
IC30	SN7440N				510000440

EDGE CONNECTORS — 1170, PCB No. 1

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	$\overline{\text{MAINS SET}}$	
2AB	320	MAINS SET	
3AB	640		UNCLASSIFIED
4AB	641		UNCLASSIFIED
10AB	598	10Hz	
11AB	607	200kHz	
12AB	642		UNCLASSIFIED
13AB	503	START RAMP	
14AB	688		UNCLASSIFIED
15AB	609	1MHz	
16AB	606	100kHz	
17AB	601	10kHz	
18AB	600	1kHz	
19AB	599	100Hz	
20AB	616	10MHz	
21AB	617	10MHz HI	
22AB	615	10MHz GROUND	
23AB	620	10.2 —12MHz HI	
24AB	619	10.2 —12MHz GROUND	
25AB	611	2MHz	
32AB	543	T10 (DIGIT CONTROL)	
33AB	170	$\overline{\text{FREQ. STROBE}}$	
34AB	542	T9 (DIGIT CONTROL)	
35AB	211	HOLD RAMP	
36AB	689		UNCLASSIFIED
37AB	612	$\overline{\geqslant 10\text{MHz}}$	
38AB	643		UNCLASSIFIED
39AB	452	SAMPLE RAMP	
40AB	359	OUTPUT VOLTS EXPONENT 1	
41AB	360	OUTPUT VOLTS EXPONENT 2	
42AB	644		UNCLASSIFIED
43AB	358	OUTPUT VOLTS EXP STROBE	
48AB	26	$\overline{\text{ADD BIAS POLARITY}}$	
49AB	13	$\overline{\text{ADD BIAS POLARITY STROBE}}$	
53AB	342	MOS STORE DATA OUTPUT 8	
54AB	341	MOS STORE DATA OUTPUT 4	
55AB	340	MOS STORE DATA OUTPUT 2	
56AB	339	MOS STORE DATA OUTPUT 1	

COMPONENT LAYOUT, 1170 PCB No. 1



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PARTS LIST, 1170 PCB No. 2

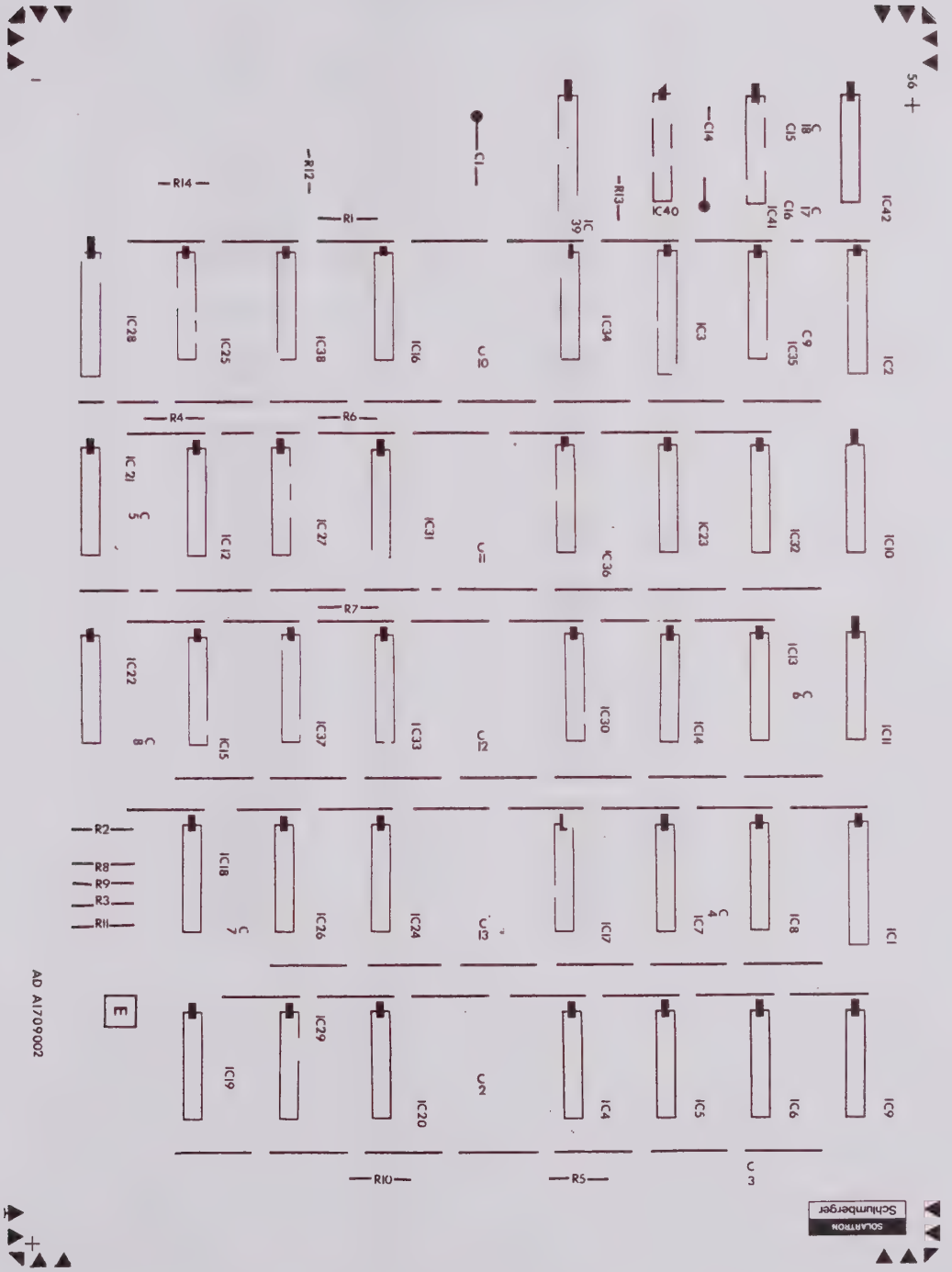
Printed Circuit Board A1709102
(N Cycle Counter)

Cct Ref.	General Description				Solartron Part No.
R1	CACP	1k	1/8W	10%	172031000
R2	CACP	2.2k	1/8W	10%	172032200
R3	CACP	2.2k	1/8W	10%	172032200
R4 to R7	CACP	1k	1/8W	10%	172031000
R8	CACP	2.2k	1/8W	10%	172032200
R9 to R12	CACP	1k	1/8W	10%	172031000
R13	MEOX	27k	1/4W	5%	195642700
R14	CACP	2.2k	1/8W	10%	172032200
C1	TAND	4.7	10V	20%	265464700
C2 to C9	CERM	0.047	25V	20%	241944700
C14	TAND	22	15V	20%	265672200
C15 to C18	CERM	2200p	500V	20%	241332200
IC1	SN74151N				510000850
IC2	SN74175N				510001310
IC3	SN7442N				510000330
IC4 to IC15	SN7490N				510000280
IC16 to IC22	SN7474N				510000490
IC23 to IC27	SN7450N				510000450
IC28	SN74157				510001280
IC29	SN7453N				510001250
IC30	SN7402N				510000270
IC31	SN7420N				510000380
IC32	SN7410N				510000420
IC33 to IC35	SN7400N				510000340
IC36 to IC38	SN7404N				510000410
IC39	SN74151N				510000850
IC40	SN74121N				510000530
IC41	SN7402N				510000270
IC42	SN15836N				510000290

EDGE CONNECTORS – 1170, PCB No. 2

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	$\overline{\text{MAINS SET}}$	
2A	248	INTEGRATION TIME 2	
2B	476	$\overline{\text{STOP}}$	
3A	247	INTEGRATION TIME 1	
3B	325	MEASURE DELAY 2	
4A	250	$\overline{\text{INT GEN CLOCK}}$	
4B	324	MEASURE DELAY 1	
5A	249	INT/$\overline{\text{EXT}}$	
5B	349	N CYCLE CLOCK	
6A	147	$\overline{\text{EXT GEN CLOCK}}$	
6B	149	$\overline{\text{EXT SYNC}}$	
7A	245	$\overline{\text{INT. BUSY}}$	
7B	97	DELAY/$\overline{\text{INT}}$	
8A	614	10MHz EXP 2	
8B	185	GENERATOR CLOCK	
9A	613	10MHz EXP 1	
9B	463	$\overline{\text{SET 0}}^{\circ}$	
10AB	387	$\overline{\text{PRE 0}}^{\circ}$	
11AB	388	$\overline{\text{PRE 0}}^{\circ}$	
12AB	605	$\overline{\text{10kHz RANGE}}$	
13A	489	SYNTHESISER OUTPUT	
14A	607	200kHz	
14B	645	SIN/COS SET 0°	
15AB	609	1MHz	
16AB	606	100kHz	
17AB	601	10kHz	
18AB	600	1kHz	
19AB	599	100Hz	
21AB	616	10MHz	
25AB	611	2MHz	
26A	10	$\overline{\text{AUTORANGE OVERLOAD}}$	
26B	169	$\overline{\text{FREQ. EXP. STROBE}}$	
42AB	521	$\overline{\text{TIME}}$	
43AB	144	EOT	
52AB	323	$\overline{\text{MEASURE BIAS}}$	
53A	342	MOS STORE DATA OUTPUT 8	
54A	341	MOS STORE DATA OUTPUT 4	
55A	340	MOS STORE DATA OUTPUT 2	
55B	210	$\overline{\text{HET ON}}$	
56A	339	MOS STORE DATA OUTPUT 1	

COMPONENT LAYOUT, 1170 PCB No. 2



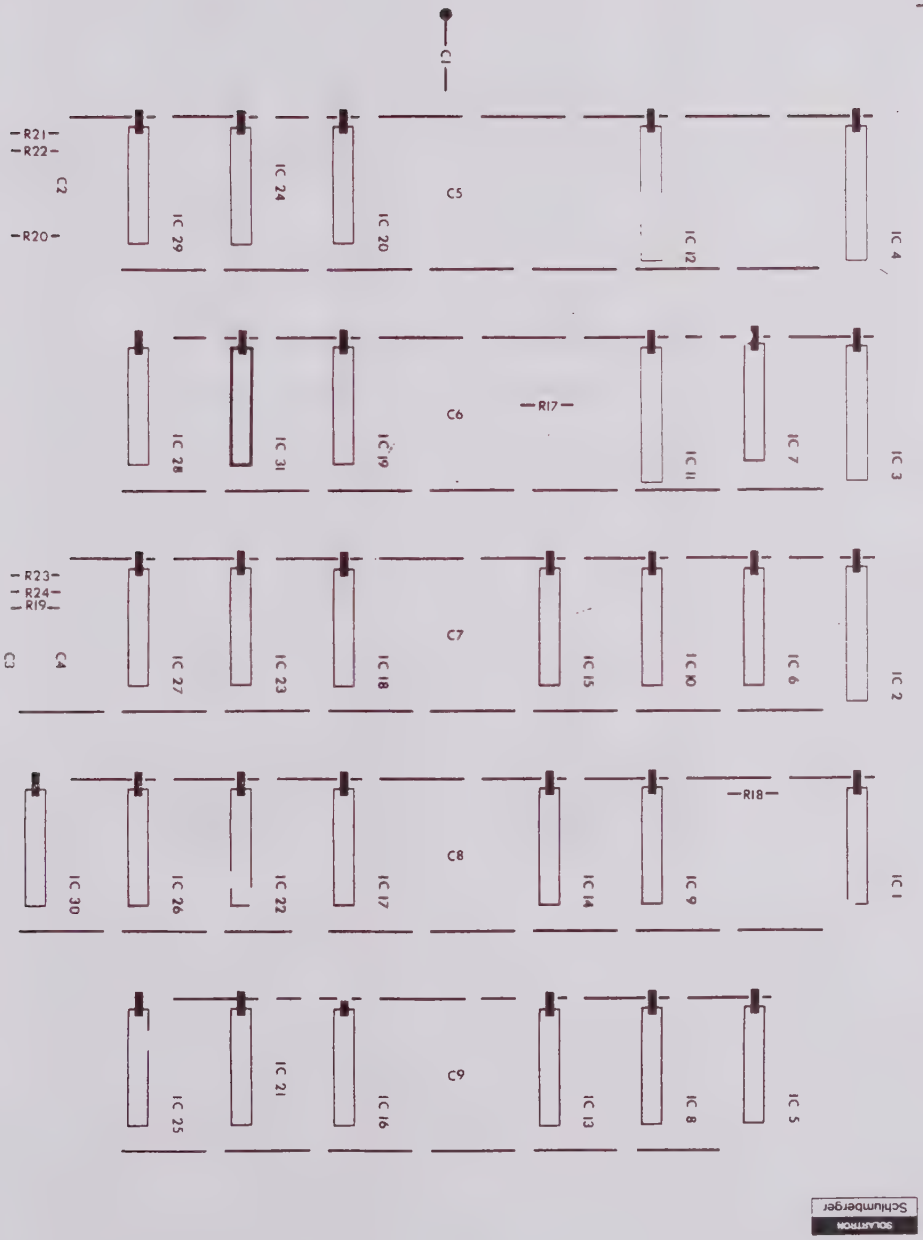
PARTS LIST, 1170 PCB No. 3

Printed Circuit Board A1709103
(SIN/COS Generator)

Cct Ref.	General Description				Solartron Part No.
R17 to R20	CACP	1k	1/8W	10%	172031000
R21	CACP	2.2k	1/8W	10%	172032200
R22 to R24	CACP	680	1/8W	10%	172026800
C1	TAND	4.7	10V	20%	265464700
C2	CERM	.047	25V	20%	241944700
C3	CERM	.001	500V	20%	241331000
C4	CERM	.001	500V	20%	241331000
C5 to C9	CERM	.047	25V	20%	241944700
IC1	SN7474N				510000490
IC2	SN7476N				510000500
IC3	SN7483N				510000840
IC4	SCM2805				510000950
IC5	SN7474N				510000490
IC6	SN7420N				510000380
IC7	SN7404N				510000410
IC8	SN7400N				510000340
IC9	SN7450N				510000450
IC10	SN7404N				510000410
IC11	SN74191N				510000940
IC12	SCM2805				510000950
IC13	SN7474N				510000490
IC14	SN7474N				510000490
IC15	SN7400N				510000340
IC16	SN7486N				510000650
IC17	SN7474N				510000490
IC18	SN7490N				510000280
IC19	SN7490N				510000280
IC20	SN7400N				510000340
IC21	SN7402N				510000270
IC22	SN7450N				510000450
IC23	SN7400N				510000340
IC24	SN7404N				510000410
IC25	SN7400N				510000340
IC26	SN7460N				510001320
IC27	SN7406N				510000760
IC28	SN7450N				510000450
IC29	SN7474N				510000490
IC30	SN7404N				510000410
IC31	SN7474N				510000490

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	$\overline{\text{MAINS SET}}$	
2AB	476	$\overline{\text{STOP}}$	
3A	162	$\overline{\text{FORCE HET}}$	
4AB	340	N CYCLE CLOCK	
5AB	67	CORRELATOR CLOCK	
7AB	245	$\overline{\text{INT. BUSY}}$	
8AB	185	GENERATOR CLOCK	
9AB	463	$\overline{\text{SET 0}^{\circ}}$	
10AB	387	PRE 0°	
14A	645	SIN/COS SET 0°	
15AB	609	1MHz	
16AB	606	100kHz	
17AB	601	10kHz	
18AB	600	1kHz	
19AB	599	100Hz	
21AB	616	10MHz	
25AB	611	2MHz	
26A	125	DEMOD	
26B	63	CARRIER POLARITY	
32A	461	$\overline{\text{SGN SIN}}$	
32B	460	$\overline{\text{SGN COS}}$	
35A	79	COS $\overline{80}$	
35B	471	SIN $\overline{80}$	
36A	75	COS $\overline{8}$	
36B	467	SIN $\overline{8}$	
39AB	550	$\overline{\text{UPDATE}}$	
40A	78	COS $\overline{40}$	
40B	470	SIN $\overline{40}$	
41A	74	COS $\overline{4}$	
41B	466	SIN $\overline{4}$	
42AB	521	$\overline{\text{TIME}}$	
43AB	144	EOT	
45A	77	COS $\overline{20}$	
45B	469	SIN $\overline{20}$	
46A	73	COS $\overline{2}$	
46B	465	SIN $\overline{2}$	
50A	76	COS $\overline{10}$	
50B	468	SIN $\overline{10}$	
51A	72	COS $\overline{1}$	
51B	464	SIN $\overline{1}$	
52AB	323	$\overline{\text{MEASURE BIAS}}$	
55AB	210	$\overline{\text{HET ON}}$	
56AB	66	CHOP	

COMPONENT LAYOUT, 1170 PCB No. 3

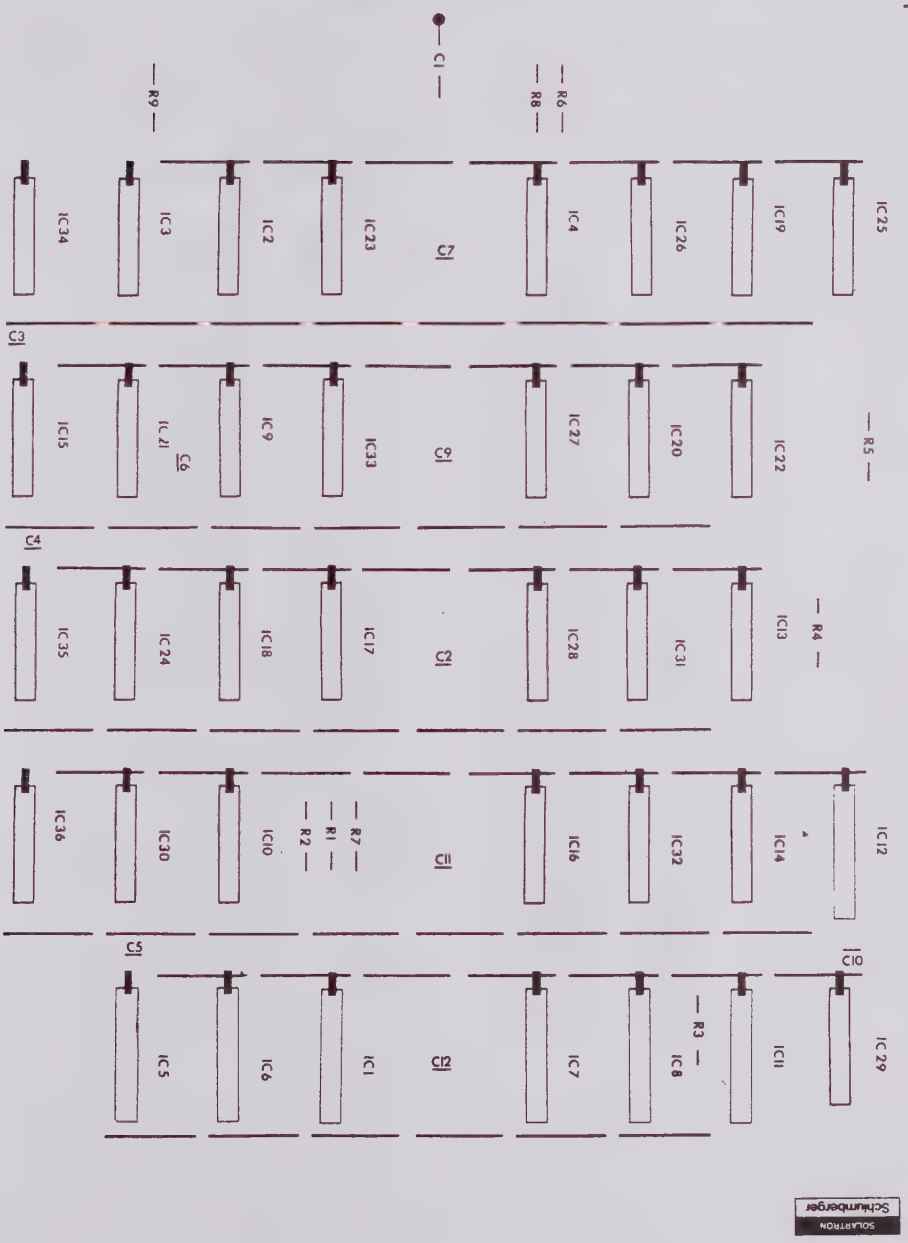


Printed Circuit Board A1709104
(Sequence Logic)

Cct Ref.	General Description				Solartron Part No.
R1 to R9	CACP	1k	1/8W	10%	172031000
C1	TAND	4.7	10V	20%	265464700
C2 to C7	CERM	0.047	25V	20%	241944700
C10	CERM	0.047	25V	20%	241944700
C12	CERM	0.047	25V	20%	241944700
IC1 to IC3	SN74151N				510000850
IC4	SN74164N				510001150
IC5 to IC8	SN74190N				510000930
IC9	SN7490N				510000280
IC10	SN7493N				510000310
IC11	SN7476N				510000500
IC12	SN7476N				510000500
IC13 to IC15	SN7474N				510000490
IC16 to IC18	SN74175N				510001310
IC19 to IC21	SN7460N				510001320
IC22 to IC24	SN7450N				510000450
IC25	SN7408N				510000830
IC26	SN7430N				510000430
IC27	SN7420N				510000380
IC28 to IC31	SN7400N				510000340
IC32	SN7402N				510000270
IC33	SN7402N				510000270
IC34	SN7404N				510000410
IC35	SN7450N				510000450
IC36	SN7400N				510000340

E.C. No.	No.	INTERCONNECTION LIST DETAILS SIGNAL TITLE	REMARKS
1AB	321	MAINS SET	
2A	184	GO	
2B	120	DECADE 4	
3B	119	DECADE 2	
4B	118	DECADE 1	
5AB	52	BUSY	
6AB	246	INT DECSH	
7A	245	INT. BUSY	
8AB	244	INT	
13A	254	ITERATION CLOCK	
13B	391	PRE CLOCK	
14AB	80	CPO	
15A	609	1MHz	
16A	606	100kHz	
16B	22	ABN CARRY A	
17A	601	10kHz	
17B	23	ABN CARRY B	
18A	600	1kHz	
18B	336	MPX STROBE	
19A	599	100Hz	
20B	361	OP LATCH STROBE	
21A	616	10MHz	
22A	335	MPX 1 CMD	
22B	331	MPX ADDRESS 1	
23A	494	STOP CODE A	
23B	493	STOP CODE B	
24A	590	1/1000	
24B	302	LOAD	
25AB	611	2MHz	
26B	544	TIMER/ITERATION O FLO	
32A	461	SGN SIN	
32B	460	SGN COS	
34B	311	LOG CONSTANT $\overline{8}$	
35AB	471	SIN $\overline{80}$	
36AB	467	SIN $\overline{8}$	
37AB	459	SGN V	
39A	550	UPDATE	
39B	310	LOG CONSTANT $\overline{4}$	
40AB	470	SIN $\overline{40}$	
41AB	466	SIN $\overline{4}$	
42AB	521	TIME	
43AB	144	EOT	
44B	309	LOG CONSTANT $\overline{2}$	
45AB	469	SIN $\overline{20}$	
46AB	465	SIN $\overline{2}$	
47AB	547	TIMER CLOCK	
49B	308	LOG CONSTANT $\overline{1}$	
50AB	468	SIN $\overline{10}$	
51AB	464	SIN $\overline{1}$	
52AB	323	MEASURE BIAS	
56AB	555	V TO F	

COMPONENT LAYOUT, 1170 PCB No. 4



AD A1709004

PARTS LIST, 1170 PCB No. 5

Printed Circuit Board A1709105
(Arithmetic Register)

Cct Ref.	General Description				Solartron Part No.
R1 to R5	CACP	2.2k	1/8W	10%	172032200
R6 to R15	CACP	1k	1/8W	10%	172031000
C1 to C12	CERM	0.047	25V	20%	241944700
C13	TAND	4.7	10V	20%	265464700
IC1	SN7406N				510000760
IC2	SN7450N				510000450
IC3	SN74164N				510001150
IC4	SN7400N				510000340
IC5	SN74151N				510000850
IC6	SN7402N				510000270
IC7	SN74175N				510001310
IC8	SN74164N				510001150
IC9	SN74175N				510001310
IC10	SN74151N				510000850
IC11	SN7460N				510001320
IC12	SN7450N				510000450
IC13	SN74164N				510001150
IC14	SN7486N				510000650
IC15	SN74151N				510000850
IC16	SN7460N				510001320
IC17	SN7450N				510000450
IC18	SN74164N				510001150
IC19	SN7402N				510000270
IC20	SN74151N				510000850
IC21	SN7460N				510001320
IC22	SN74175N				510001310
IC23	SN7402N				510000270
IC24	SN7483N				510000840
IC25	SN7486N				510000650
IC26	SN7402N				510000270
IC27	SN7483N				510000840
IC28	SN74175N				510001310
IC29	SN7450N				510000450
IC30	SN7460N				510001320
IC32	SN7408N				510000830
IC33	SN7404N				510000410
IC34	SN74175N				510001310
IC35	SN7450N				510000450
IC39	SN7420N				510000380
IC40	SN7400N				510000340

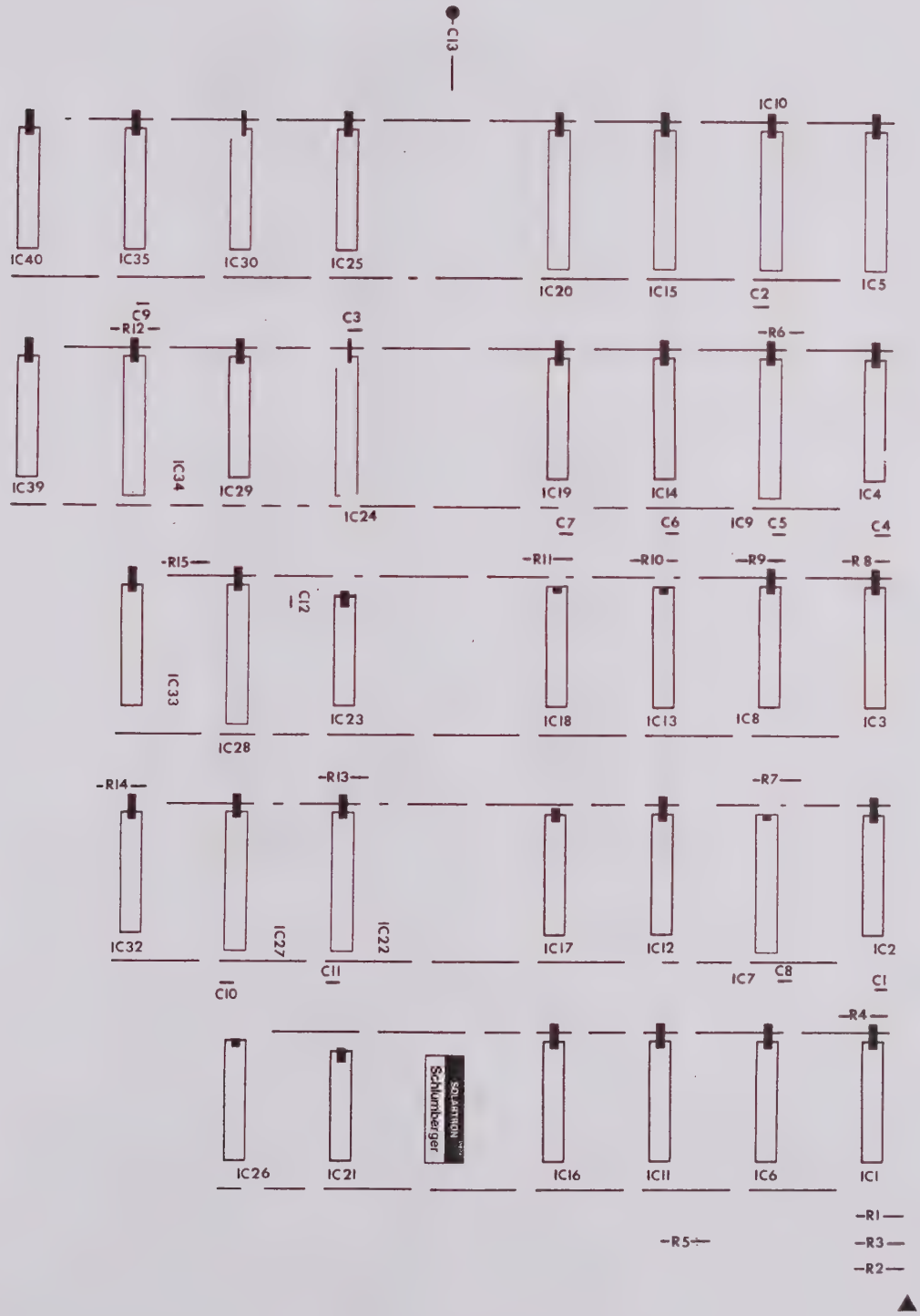
E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	$\overline{\text{MAINS SET}}$	
2AB	120	DECADE 4	
3AB	119	DECADE 2	
4AB	118	DECADE 1	
5A	64	$\overline{\text{CLEAR}}$	
5B	116	$\overline{\text{DEC 9 ZERO A}}$	
6AB	124	$\overline{\text{DECSH}}$	
8AB	244	INT	
9B	477	STROBE A	
10AB	114	DEC 6	
11AB	115	$\overline{\text{DEC 6. DEC 7}}$	
12B	135	ENABLE A	
13AB	391	$\overline{\text{PRE CLOCK}}$	
14AB	80	$\overline{\text{CPO}}$	
15A	385	POS A	
15B	386	POS B	
16A	22	ABN CARRY A	
17A	11	ADD A CMD	
17B	12	ADD B CMD	
18AB	336	MPX STROBE	
19AB	234	$\overline{\text{INH. SGN. CH.}}$	
20A	361	OP LATCH STROBE	
20B	333	MPX ADDRESS 4A	
21B	333	MPX ADDRESS 4A	
21A	332	MPX ADDRESS 2	
22AB	331	MPX ADDRESS 1	
23AB	493	STOP CODE B	
24AB	302	LOAD	
25AB	611	2MHz	
26AB	544	$\overline{\text{TIMER/ITERATION O'FLO}}$	
32A	461	$\overline{\text{SGN SIN}}$	
32B	460	$\overline{\text{SGN COS}}$	
33A	34	B $\overline{8}$	
33B	5	A $\overline{8}$	
34A	38	B/1000 $\overline{8}$	
34B	9	A/1000 $\overline{8}$	
35A	471	SIN $\overline{80}$	
35B	311	LOG CONSTANT $\overline{1}$	
36AB	467	SIN $\overline{8}$	
37AB	459	SGN V	
38A	33	B $\overline{4}$	
38B	4	A $\overline{4}$	
39A	37	B/1000 $\overline{4}$	
39B	8	A/1000 $\overline{4}$	
40A	470	SIN $\overline{40}$	
40B	310	LOG CONSTANT $\overline{2}$	
41AB	466	SIN $\overline{4}$	
42AB	521	$\overline{\text{TIME}}$	
43A	32	B $\overline{2}$	
43B	3	A $\overline{2}$	
44A	36	B/1000 $\overline{2}$	

E.C. No.	INTERCONNECTION LIST DETAILS		REMARKS
	No.	SIGNAL TITLE	
44B	7	A/1000 $\overline{2}$	
45A	469	SIN $\overline{20}$	
45B	309	LOG CONSTANT $\overline{2}$	
46AB	465	SIN $\overline{2}$	
47AB	547	$\overline{\text{TIMER CLOCK}}$	
48A	31	B $\overline{1}$	
48B	2	A $\overline{1}$	
49A	35	B/1000 $\overline{1}$	
49B	6	A/1000 $\overline{1}$	
50A	468	SIN $\overline{10}$	
50B	308	LOG CONSTANT $\overline{1}$	
51AB	464	SIN $\overline{1}$	
52AB	323	$\overline{\text{MEASURE BIAS}}$	
53AB	307	LOCAL DATA BUS $\overline{8}$	
54AB	306	LOCAL DATA BUS $\overline{4}$	
55AB	305	LOCAL DATA BUS $\overline{2}$	
56AB	304	LOCAL DATA BUS $\overline{1}$	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	$\overline{\text{MAINS SET}}$	
2AB	120	DECADE 4	
3AB	119	DECADE 2	
4AB	118	DECADE 1	
5A	64	$\overline{\text{CLEAR}}$	
5B	117	$\overline{\text{DEC 9 ZERO B}}$	
6AB	124	$\overline{\text{DECSH}}$	
8AB	244	INT	
9B	478	STROBE B	
10AB	114	DEC 6	
11AB	115	$\overline{\text{DEC 6. DEC 7}}$	
12B	136	ENABLE B	
13AB	391	$\overline{\text{PRE CLOCK}}$	
14AB	80	$\overline{\text{CPO}}$	
15A	386	POS B	
15B	385	POS A	
16A	23	ABN CARRY B	
17A	12	ADD B CMD	
17B	11	ADD A CMD	
18AB	336	MPX STROBE	
19AB	234	$\overline{\text{INH. SGN. CH}}$	
20A	361	OP LATCH STROBE	
20B	334	MPX ADDRESS 4B	
21B	334	MPX ADDRESS 4B	
21A	332	MPX ADDRESS 2	
22AB	331	MPX ADDRESS 1	
23AB	493	STOP CODE B	
24AB	302	LOAD	
25AB	611	2MHz	
26AB	544	$\overline{\text{TIMER/ITERATION O'FLO}}$	
32AB	460	$\overline{\text{SGN COS}}$	
33A	5	A $\overline{8}$	
33B	34	B $\overline{8}$	
34A	9	A/1000 $\overline{8}$	
34B	38	B/1000 $\overline{8}$	
35B	38	B/1000 $\overline{8}$	
35A	79	COS $\overline{80}$	
36AB	75	COS $\overline{8}$	
37AB	459	SGN V	
38A	4	A $\overline{4}$	
38B	33	B $\overline{4}$	
39A	8	A/1000 $\overline{4}$	
39B	37	B/1000 $\overline{4}$	
40B	37	B/1000 $\overline{4}$	
40A	78	COS $\overline{40}$	
41AB	74	COS $\overline{4}$	
42AB	521	$\overline{\text{TIME}}$	
43A	3	A $\overline{2}$	
43B	32	B $\overline{2}$	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
44A	7	A/1000 $\overline{2}$	
44B	36	B/1000 $\overline{2}$	
45B	36	B/1000 $\overline{2}$	
45A	77	COS $\overline{20}$	
46AB	73	COS $\overline{2}$	
47AB	547	$\overline{\text{TIMER CLOCK}}$	
48A	2	A $\overline{1}$	
48B	31	B $\overline{1}$	
49A	6	A/1000 $\overline{1}$	
49B	35	B/1000 $\overline{1}$	
50B	35	B/1000 $\overline{1}$	
50A	76	COS $\overline{10}$	
51AB	72	COS $\overline{1}$	
52AB	323	$\overline{\text{MEASURE BIAS}}$	
53AB	307	LOCAL DATA BUS $\overline{8}$	
54AB	306	LOCAL DATA BUS $\overline{4}$	
55AB	305	LOCAL DATA BUS $\overline{2}$	
56AB	304	LOCAL DATA BUS $\overline{1}$	

COMPONENT LAYOUT, 1170 PCB No. 5



AD AI709005

PARTS LIST, 1170 PCB No. 7

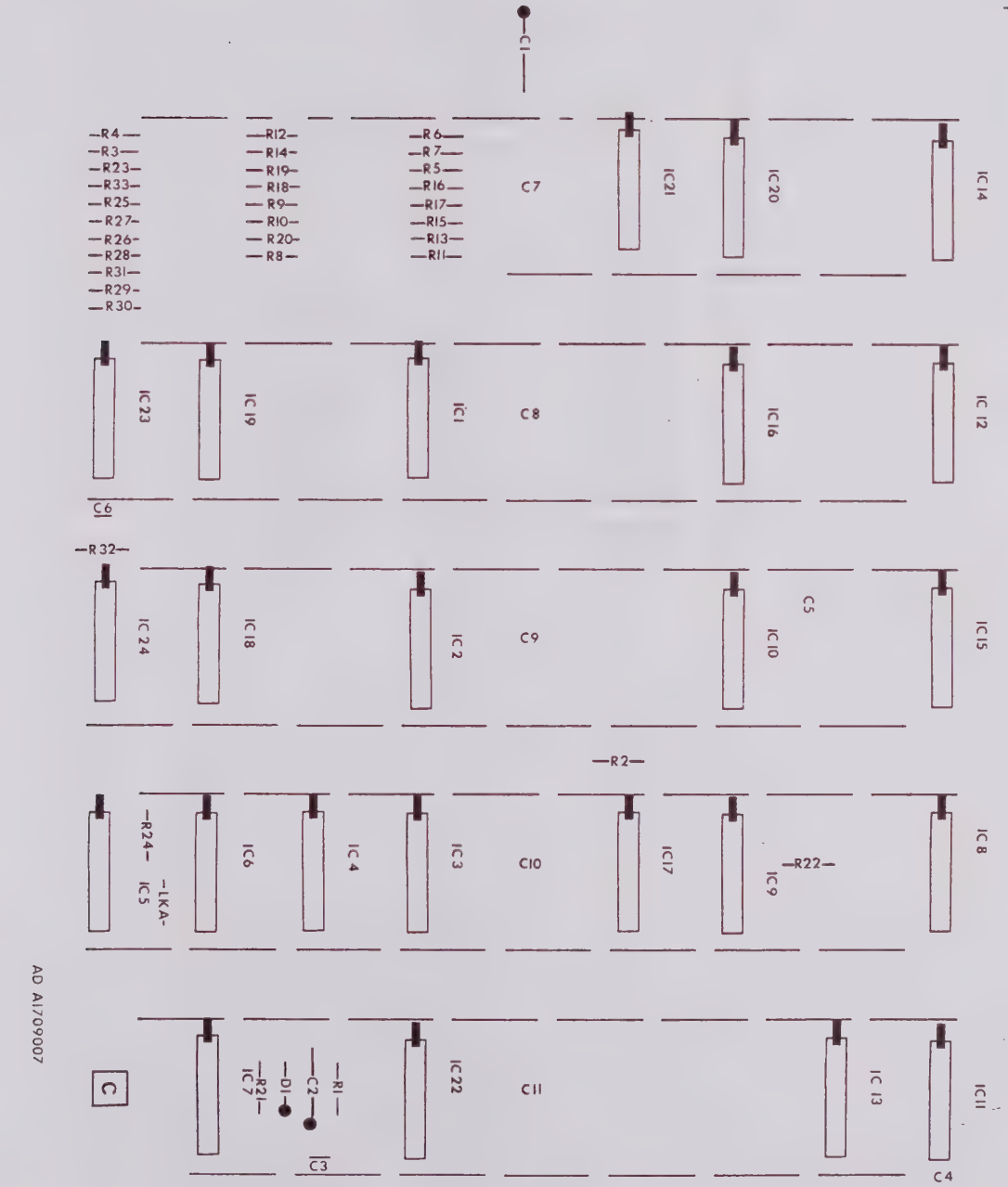
Printed Circuit Board A1709107
(Exponent Counter & Decode)

Cct Ref.	General Description				Solartron Part No.
R1	CACP	18k	1/8W	10%	172041800
R2	CACP	2.2k	1/8W	10%	172032200
R3	CACP	2.2k	1/8W	10%	172032200
R4	CACP	1k	1/8W	10%	172031000
R21	CACP	1k	1/8W	10%	172031000
R22	CACP	1k	1/8W	10%	172031000
R23 to R31	CACP	2.2k	1/8W	10%	172032200
R32	CACP	1k	1/8W	10%	172031000
R33	CACP	2.2k	1/8W	10%	172032200
C1	TAND	4.7	10V	20%	265464700
C2	TAND	4.7	10V	20%	265464700
C3 to C7	CERM	.047	25V	+50% −25%	241944700
C9	CERM	.047	25V	+50% −25%	241944700
C11	CERM	.047	25V	+50% −25%	241944700
IC1	SCM 2806				519600501
IC2	SCM 2807				519600601
IC3	SN7442N				510000330
IC4	SN7401N				510000400
IC5	SN74151N				510000850
IC6	SN74151N				510000850
IC7	SN74122N				510000910
IC8	SN74157N				510001280
IC9	SN7483N				510000840
IC10	SN74191N				510000940
IC11	SN74191N				510000940
IC12	SN7404N				510000410
IC13	SN7404N				510000410
IC14	SN7406N				510000760
IC15	SN74157N				510001280
IC16	SN7402N				510000270
IC17	SN7400N				510000340
IC18	SN7420N				510000380
IC19	SN7408N				510000830
IC20	SN7402N				510000270
IC21	SN7404N				510000410
IC22	SN7450N				510000450
IC23	SN7401N				510000400
IC24	SN7474N				510000490
D1	SD3				300522160

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	MAINS SET	
2AB	120	DECADE 4	
3A	119	DECADE 2	
3B	19	ARITH COND 1	
4A	116	DEC 9 ZERO A	
4B	118	DECADE 1	
5A	117	DEC 9 ZERO B	
5B	52	BUSY	
6A	124	DECSH	
6B	64	CLEAR	
7A	246	INT DECSH	
7B	123	DECSH CMD	
8A	97	DELAY/INT	
8B	244	INT	
9A	478	STROBE B	
9B	477	STROBE A	
10A	114	DEC 6	
10B	488	SYNCH FLAG	
11A	115	DEC 6. DEC 7	
11B	137	ENABLE C	
12A	136	ENABLE B	
12B	135	ENABLE A	
13AB	254	ITERATION CLOCK	
14AB	386	POS B	
15AB	385	POS A	
16AB	12	ADD B CMD	
17AB	11	ADD A CMD	
18B	312	LATCHED OVERLOAD	
19AB	234	INH. SGN. CH	
20A	334	MPX ADDRESS 4B	
20B	333	MPX ADDRESS 4A	
21AB	332	MPX ADDRESS 2	
22A	493	STOP CODE B	
22B	335	MPX 1 CMD	
23AB	494	STOP CODE A	
24A	302	LOAD	
24B	590	1/1000	
25AB	611	2MHz	
26AB	544	TIMER/ITERATION O'FLO	
32A	460	SGN COS	
32B	461	SGN SIN	
33B	148	ENABLE DECODE	
34A	160	FLAG	
34B	646		UNCLASSIFIED
35A	475	SPARE FLAG	
35B	647		UNCLASSIFIED
36B	648		UNCLASSIFIED
37A	459	SGN V	
37B	649		UNCLASSIFIED
38A	81	COMMAND DELAY	
38B	20	ARITH COND 2	
39B	30	BTEN	
40B	1	ATEN	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
41A	572	X/$\overline{Y}$ OUTPUT (8)	
41B	255	ITERATE	
42AB	521	$\overline{\text{TIME}}$	
43B	402	ROM OUTPUT 1	
44B	403	ROM OUTPUT 2	
45B	404	ROM OUTPUT 4	
46B	405	ROM OUTPUT 8	
47AB	547	$\overline{\text{TIMER CLOCK}}$	
48B	407	ROM OUTPUT 32	
49B	408	ROM OUTPUT 64	
50B	551	$\overline{\text{UP}}$/DOWN	
51B	303	LOAD C	
52AB	323	$\overline{\text{MEASURE BIAS}}$	
53AB	307	LOCAL DATA BUS $\overline{8}$	
54AB	306	LOCAL DATA BUS $\overline{4}$	
55AB	305	LOCAL DATA BUS $\overline{2}$	
56AB	304	LOCAL DATA BUS $\overline{1}$	

COMPONENT LAYOUT, 1170 PCB No. 7



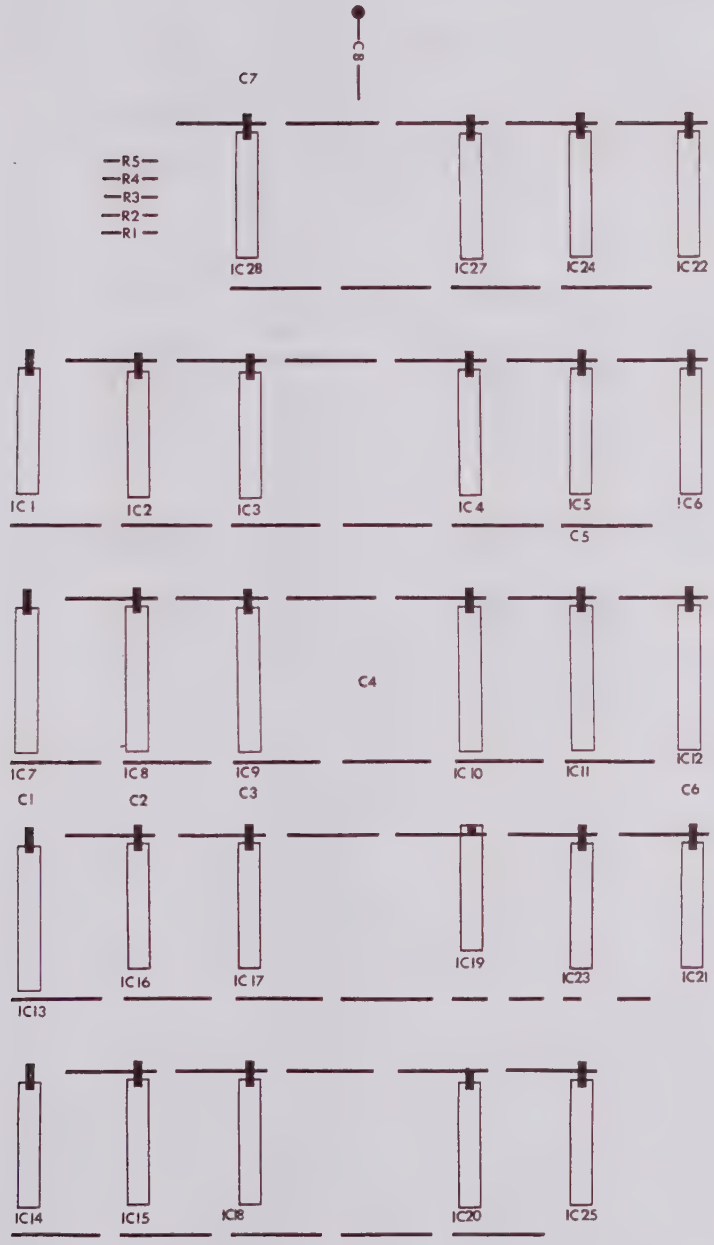
PARTS LIST, 1170 PCB No. 8

Printed Circuit Board A1709108
(Iteration Counter)

Cct Ref.	General Description				Solartron Part No.
R1 to R5	CACP	1k	1/8W	10%	172031000
C1 to C7	CERM	.047	25V	20%	241944700
C8	TAND	4.7	10V	20%	265464700
IC1 to IC6	SN7401N				510000400
IC7 to IC12	SN74190				510000930
IC13	SN7442N				510000330
IC14	SN7404N				510000410
IC15	SN7400N				510000340
IC16	SN7450N				510000450
IC17	SN7450N				510000450
IC18	SN7400N				510000340
IC19	SN7450N				510000450
IC20	SN7404N				510000410
IC21	SN7402N				510000270
IC22	SN7402N				510000270
IC23	SN7404N				510000410
IC24	SN7406N				510000760
IC25	SN7402N				510000270
IC27	SN7450N				510000450
IC28	SN7474N				510000490

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	$\overline{\text{MAINS SET}}$	
2AB	120	DECADE 4	
3AB	119	DECADE 2	
4AB	118	DECADE 1	
5AB	52	$\overline{\text{BUSY}}$	
6AB	64	$\overline{\text{CLEAR}}$	
8AB	244	INT	
9A	478	STROBE B	
9B	477	STROBE A	
11AB	137	ENABLE C	
13AB	254	$\overline{\text{ITERATION CLOCK}}$	
14AB	386	POS B	
15AB	385	POS A	
16AB	12	ADD B CMD	
17AB	11	ADD A CMD	
19AB	234	$\overline{\text{INH. SGN. CH}}$	
21AB	332	MPX ADDRESS 2	
23AB	494	STOP CODE A	
24AB	302	LOAD	
25AB	611	2MHz	
26A	544	$\overline{\text{TIMER/ITERATION O'FLO}}$	
33AB	148	ENABLE DECODE	
34AB	646		UNCLASSIFIED
35AB	647		UNCLASSIFIED
36AB	648		UNCLASSIFIED
37AB	649		UNCLASSIFIED
38AB	20	ARITH COND 2	
39AB	30	BTEN	
40AB	1	ATEN	
41AB	255	ITERATE	
42AB	521	$\overline{\text{TIME}}$	
43AB	402	ROM OUTPUT 1	
44AB	403	ROM OUTPUT 2	
45AB	404	ROM OUTPUT 4	
46AB	405	ROM OUTPUT 8	
47AB	547	$\overline{\text{TIMER CLOCK}}$	
48AB	407	ROM OUTPUT 32	
49AB	408	ROM OUTPUT 64	
50AB	551	$\overline{\text{UP}}$/DOWN	
51AB	303	LOAD C	
52AB	323	$\overline{\text{MEASURE BIAS}}$	
53AB	307	LOCAL DATA BUS $\overline{8}$	
54AB	306	LOCAL DATA BUS $\overline{4}$	
55AB	305	LOCAL DATA BUS $\overline{2}$	
56AB	304	LOCAL DATA BUS $\overline{1}$	

COMPONENT LAYOUT, 1170 PCB No. 8



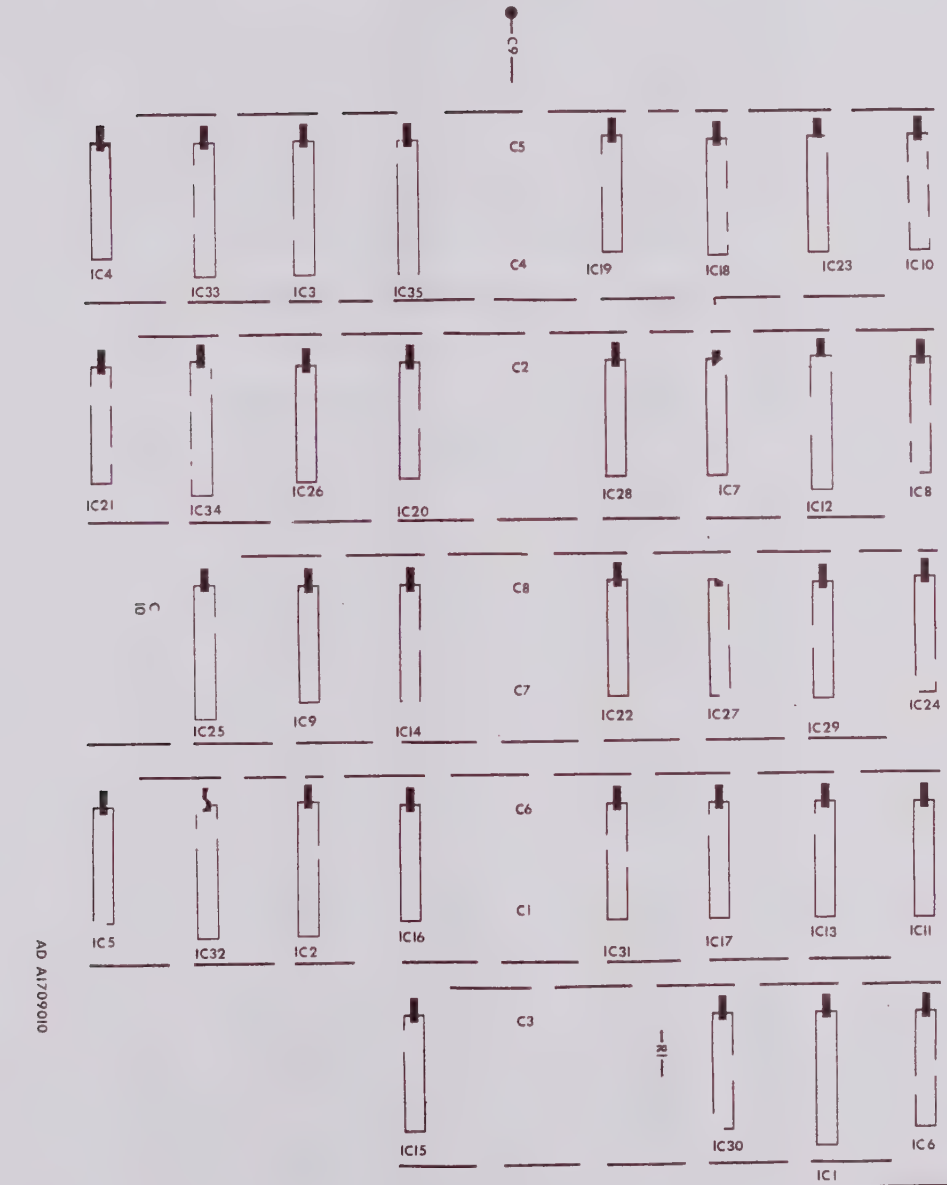
AD AI709008 02

Printed Circuit Board A1709110
(Main Control "A")

Cct Ref.	General Description				Solartron Part No.
R1	CACP	1k	1/8W	10%	172031000
C1 to C8	CERM	0.047	25V	−20% + 10%	241944700
C9	TAND	4.7	10V	20%	265464700
C10	CERM	0.047	25V	−20% + 10%	241944700
IC1 to IC3	SN7483N				510000840
IC4 to IC9	SN7402N				510000270
IC10	SN7440N				510000440
IC11	SN7440N				510000440
IC12	SN7442N				510000330
IC13	SN7400N				510000340
IC14	SN7400N				510000340
IC15 to IC22	SN7450N				510000450
IC23	SN7474N				510000490
IC24	SN7490N				510000280
IC25	SN7475N				510000350
IC26	SN7404N				510000410
IC27	SN7404N				510000410
IC28	SN7400N				510000340
IC29	SN7410N				510000420
IC30	SN7474N				510000490
IC31	SN7474N				510000490
IC32 to IC35	SN74175N				510001310

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	$\overline{\text{MAINS SET}}$	
2AB	120	DECADE 4	
3AB	119	DECADE 2	
4AB	118	DECADE 1	
5AB	52	$\overline{\text{BUSY}}$	
11A	137	ENABLE C	
11B	138	ENABLE STORE	
12A	136	ENABLE B	
12B	491	STORE COMMAND PULSE	
13A	135	ENABLE A	
13B	322	MASTER CMD PULSE	
16A	429	ROM ADDRESS 2	
16B	428	ROM ADDRESS 1	
17A	431	ROM ADDRESS 8	
17B	430	ROM ADDRESS 4	
18A	433	ROM ADDRESS 32	
18B	432	ROM ADDRESS 16	
19A	435	ROM ADDRESS 128	
19B	434	ROM ADDRESS 64	
20A	436	ROM ADDRESS 256	
20B	437	ROM ADDRESS 512	
21A	496	STORE ADDRESS 8	
21B	479	SUBROUTINE BUFFER 64	
22AB	480	SUBROUTINE BUFFER 128	
23AB	481	SUBROUTINE BUFFER 256	
24AB	482	SUBROUTINE BUFFER 512	
25AB	611	2MHz	
26AB	10	$\overline{\text{AUTORANGE OVERLOAD}}$	
32A	495	STORE ADDRESS 16	
32B	350	$\overline{\text{OUTPUT COMMAND PULSE}}$	
33A	577	ZERO ARITH DECADE	
33B	70	$\overline{\text{CONDITION ENABLE}}$	
34B	71	CONDITION RETURN	
35B	230	INC STORE DECADE	
36B	231	INC ARITH DECADE	
37A	492	SYSTEM FEEDBACK	
37B	576	ZERO STORE DECADE	
38AB	20	ARITH COND 2	
41AB	504	STATE 2	
42AB	505	STATE 1	
43AB	402	ROM OUTPUT 1	
44AB	403	ROM OUTPUT 2	
45AB	404	ROM OUTPUT 4	
46AB	405	ROM OUTPUT 8	
47AB	406	ROM OUTPUT 16	
48AB	407	ROM OUTPUT 32	
49AB	408	ROM OUTPUT 64	
50AB	409	ROM OUTPUT 128	
52AB	323	$\overline{\text{MEASURE BIAS}}$	
53AB	307	LOCAL DATA BUS $\overline{8}$	
54AB	306	LOCAL DATA BUS $\overline{4}$	
55AB	305	LOCAL DATA BUS $\overline{2}$	
56AB	304	LOCAL DATA BUS $\overline{1}$	

COMPONENT LAYOUT, 1170 PCB No. 10



PARTS LIST, 1170 PCB No. 11

Printed Circuit Board A1709111
(Main Control "B")

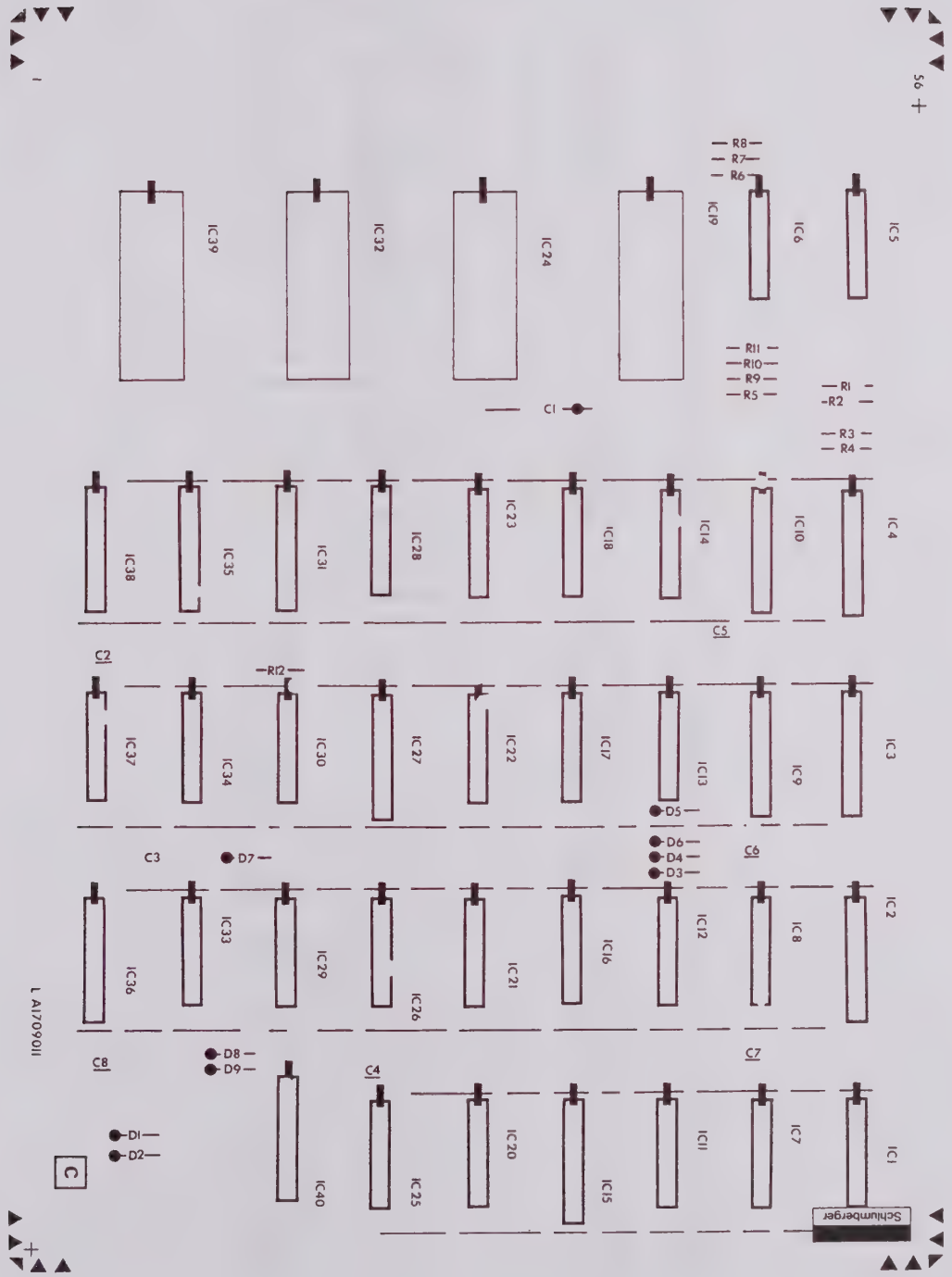
Cct Ref.	General Description				Solartron Part No.
R1 to R5	CACP	2.2k	1/8W	10%	172032200
R6 to R11	CACP	470	1/8W	10%	172024700
R12	CACP	4.7k	1/8W	10%	172034700
C1	TAND	.33	10V	20%	265473300
C2 to C8	CERM	0.047	25V	+50% −25%	241944700
D1	IN4001				300522060
D2	IN4001				300522060
D3 to D9	SD3				300522160
IC1	SN7401N				510000400
IC2	SN7406N				510000760
IC3	SN74157N				510001280
IC4	SN74175N				510001310
IC5	SN7402N				510000270
IC6	SN7406N				510000760
IC7	SN7400N				510000340
IC8	SN7490N				510000280
IC9	SN74157N				510001280
IC10	SN7475N				510000350
IC11	SN7420N				510000380
IC12	SN15832				510000120
IC13	SN7486N				510000650
IC14	SN7486N				510000650
IC15	SN7442N				510000330
IC16	SN7408N				510000830
IC17	SN7402N				510000270
IC18	SN7400N				510000340
IC19	INTEL 1301				519601502
IC20	SN7400N				510000340
IC21	SN7474N				510000490
IC22	SN7474N				510000490
IC23	SN7404N				510000410
IC24					519601401
IC25	SN7450N				510000450
IC26	SN7400N				510000340
IC27	SN7442N				510000330
IC28	SN7400N				510000340
IC29	SN7402N				510000270
IC30	SN7474N				510000490
IC31	SN74151N				510000850
IC32					519601301
IC33	SN7404N				510000410
IC34	SN7400N				510000340
IC35	SN74151N				510000850
IC36	SN7474N				510000490
IC37	SN7490N				510000280
IC38	SN74151N				510000850
IC39					519601201
IC40	SN74175N				510001310

EDGE CONNECTORS – 1170, PCB No. 11

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	$\overline{\text{MAINS SET}}$	
2A	120	DECADE 4	
2B	488	$\overline{\text{SYNCH FLAG}}$	
3A	119	DECADE 2	
3B	184	$\overline{\text{GO}}$	
4A	118	DECADE 1	
4B	19	ARITH COND 1	
5A	52	$\overline{\text{BUSY}}$	
5B	69	$\overline{\text{COMPUTE}}$	
6A	312	$\overline{\text{LATCHED OVERLOAD}}$	
6B	487	SINGLE	
7A	427	$\overline{\text{RESET RANGE}}$	
7B	415	RECYCLE	
8A	232	$\overline{\text{INC RANGE}}$	
8B	484	SWEEP CMD 2	
9A	424	$\overline{\text{RESET OVERLOAD}}$	
9B	483	SWEEP CMD 1	
10A	632	−11V	
10B	486	$\overline{\text{SET SWEEP OFF}}$	
11A	138	ENABLE STORE	
11B	610	1MHz (STORE)	
12A	491	STORE COMMAND PULSE	
12B	506	SWEEP MODE	
13A	322	MASTER CMD PULSE	
13B	348	MEASURE Y	
14B	347	MEASURE X	
15B	416	REJECT BIAS	
16A	428	ROM ADDRESS 1	
16B	429	ROM ADDRESS 2	
17A	430	ROM ADDRESS 4	
17B	431	ROM ADDRESS 8	
18A	432	ROM ADDRESS 16	
18B	433	ROM ADDRESS 32	
19A	434	ROM ADDRESS 64	
19B	435	ROM ADDRESS 128	
20A	437	ROM ADDRESS 512	
20B	436	ROM ADDRESS 256	
21A	479	SUBROUTINE BUFFER 64	
21B	496	STORE ADDRESS 8	
22A	480	SUBROUTINE BUFFER 128	
22B	570	X/$\overline{\text{Y}}$ FLAG	
23A	481	SUBROUTINE BUFFER 256	
23B	319	LOCAL 500kHz	
24A	482	SUBROUTINE BUFFER 512	
24B	571	X/$\overline{\text{Y}}$ OUTPUT (A)	
25AB	611	2MHz	
26A	10	$\overline{\text{AUTORANGE OVERLOAD}}$	
26B	438	$\overline{\text{RUN}}$	
32A	350	$\overline{\text{OUTPUT COMMAND PULSE}}$	
32B	495	STORE ADDRESS 16	
33A	70	$\overline{\text{CONDITION ENABLE}}$	
33B	577	ZERO ARITH DECADE	
34A	71	CONDITION RETURN	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
34B	68	$\overline{\text{CHANGE FREQ}}$	
35A	230	INC STORE DECADE	
35B	143	$\overline{\text{ENTER FREQ}}$	
36A	231	INC ARITH DECADE	
36B	142	$\overline{\text{ENTER O/P VOLTS}}$	
37A	576	ZERO STORE DECADE	
37B	492	SYSTEM FEEDBACK	
38A	20	ARITH COND 2	
38B	81	$\overline{\text{COMMAND DELAY}}$	
39A	241	INPUT RANGE 1	
39B	529	T8	
40A	242	INPUT RANGE 2	
40B	528	T7	
41A	243	INPUT RANGE 4	
41B	527	T6	
42A	572	X/$\overline{\text{Y}}$ OUTPUT (B)	
42B	526	T5	
43A	402	ROM OUTPUT 1	
43B	525	T4	
44A	403	ROM OUTPUT 2	
44B	524	T3	
45A	404	ROM OUTPUT 4	
45B	523	T2	
46A	405	ROM OUTPUT 8	
46B	522	T1	
47A	406	ROM OUTPUT 16	
47B	327	$\overline{\text{MOS STORE WRITE}}$	
48A	407	ROM OUTPUT 32	
48B	346	MOS STORE DATA INPUT 8	
49A	408	ROM OUTPUT 64	
49B	345	MOS STORE DATA INPUT 4	
50A	409	ROM OUTPUT 128	
50B	344	MOS STORE DATA INPUT 2	
51A	51	BIAS RANGE B	
51B	343	MOS STORE DATA INPUT 1	
52A	323	$\overline{\text{MEASURE BIAS}}$	
52B	50	BIAS RANGE A	
53A	307	LOCAL DATA BUS $\overline{8}$	
53B	342	MOS STORE DATA OUTPUT 8	
54A	306	LOCAL DATA BUS $\overline{4}$	
54B	341	MOS STORE DATA OUTPUT 4	
55A	305	LOCAL DATA BUS $\overline{2}$	
55B	340	MOS STORE DATA OUTPUT 2	
56A	304	LOCAL DATA BUS $\overline{1}$	
56B	339	MOS STORE DATA OUTPUT 1	

COMPONENT LAYOUT, 1170 PCB No. 11



PARTS LIST, 1170 PCB No. 12

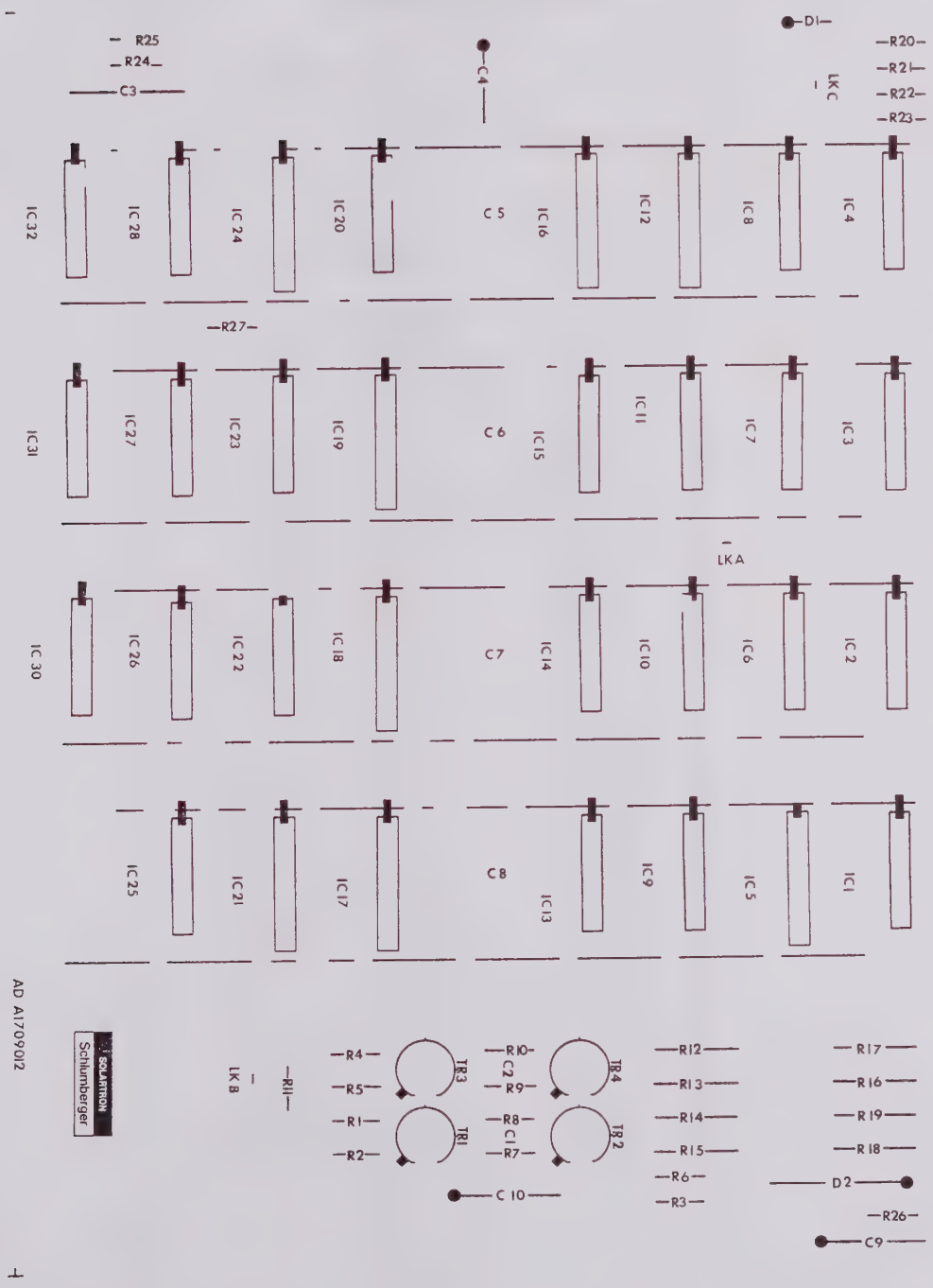
Printed Circuit Board A1709112
(Main Store)

Cct Ref.	General Description				Solartron Part No.
R1	CACP	1k	1/8W	10%	172031000
R2	CACP	390	1/8W	10%	172023900
R3	CACP	1k	1/8W	10%	172031000
R4	CACP	1k	1/8W	10%	172031000
R5	CACP	390	1/8W	10%	172023900
R6	CACP	1k	1/8W	10%	172031000
R7	CACP	1k	1/8W	10%	172031000
R8	CACP	10k	1/8W	10%	172041000
R9	CACP	1k	1/8W	10%	172031000
R10	CACP	10k	1/8W	10%	172041000
R11	CACP	1k	1/8W	10%	172031000
R12 to R19	MEOX	3k	1/2W	5%	193533000
R20 to R23	CACP	680	1/8W	10%	172026800
R24	CACP	39k	1/8W	10%	172043900
R25	CACP	1k	1/8W	10%	172031000
R26	CACP	1k	1/8W	10%	172031000
R27	CACP	1k	1/8W	10%	172031000
C1	CERM	47p			241314700
C2	CERM	47p			241314700
C3	ESTM	0.022			220342200
C4	TAND	33	10V		265473300
C5 to C8	CERM	0.047			241944700
C9	TAND	33	10V		265473300
C10	TAND	22	15V		265672200
D1	SD3				300522160
D2	Zener	5.6V	1W		300524390
TR1	BCY70				300553590
TR2	2W2369				300552390
TR3	BCY70				300553590
TR4	2W2369				300552390
IC1	SN7408				510000830
IC2	SN7450				510000450
IC3	SN7450				510000450
IC4	15830				510000100
IC5	SN1402				510001120
IC6	SN7404				510000410
IC7	SN7407				510000750
IC8	SN7408				510000830
IC9	SN7400				510000340
IC10	15 846				510000100
IC11	SN7474				510000490
IC12	SN74191				510000940
IC13	SN7400				510000340
IC14	SN7400				510000340
IC15	SN7474				510000490
IC16	SN74191				510000940
IC17 to IC19	SN7476				510000500
IC20	SN7408				510000830
IC21	SN7476				510000500
IC22	SN7400				510000340
IC23	SN7400				510000340
IC24	SN7476				510000500
IC25	SN7474				510000490
IC26	SN7402N				510000270
IC27	SN7486				510000650
IC28	SN7408				510000830
IC30	SN7402				510000270
IC31	SN7400				510000340
IC32	SN74121				510000530

EDGE CONNECTORS – 1170, PCB No. 12

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	MAINS SET	
5AB	139	ENTER PULSE	
6AB	487	SINGLE	
7AB	415	RECYCLE	
8AB	484	SWEEP CMD 2	
9AB	483	SWEEP CMD 1	
10AB	486	SET SWEEP OFF	
11AB	632	−11V	
12A	610	1MHz (STORE)	
15AB	416	REJECT BIAS	
22AB	318	LOCAL STORE SYNC	
23AB	319	LOCAL 500kHz	
24AB	541	TRIG MAINS SET	
25AB	611	2MHz	
26AB	438	RUN	
32A	143	ENTER FREQ	
32B	142	ENTER O/P VOLTS	
33AB	543	T10 (DIGIT CONTROL)	
34AB	542	T9 (DIGIT CONTROL)	
35AB	540	T13 (EQUIV. TIMING)	
36AB	539	T12 (EQUIV. TIMING)	
37AB	538	T11 (EQUIV. TIMING)	
38A	166	FREQ (KEYBOARD)	
38B	554	VOLTS (KEYBOARD)	
39AB	529	T8	
40AB	528	T7	
41AB	527	T6	
42AB	526	T5	
43AB	525	T4	
44AB	524	T3	
45AB	523	T2	
46AB	522	T1	
47AB	327	MOS STORE WRITE	
48AB	346	MOS STORE DATA INPUT 8	
49AB	345	MOS STORE DATA INPUT 4	
50AB	344	MOS STORE DATA INPUT 2	
51AB	343	MOS STORE DATA INPUT 1	
52A	140	END OF ENTER	
52B	284	KEYBOARD EXPONENT DECADE	
53AB	342	MOS STORE DATA OUTPUT 8	
54AB	341	MOS STORE DATA OUTPUT 4	
55AB	340	MOS STORE DATA OUTPUT 2	
56AB	339	MOS STORE DATA OUTPUT 1	

COMPONENT LAYOUT, 1170 PCB No. 12



PARTS LIST, 1170 PCB No. 13

Printed Circuit Board A1709113
(Equiv. Gates)

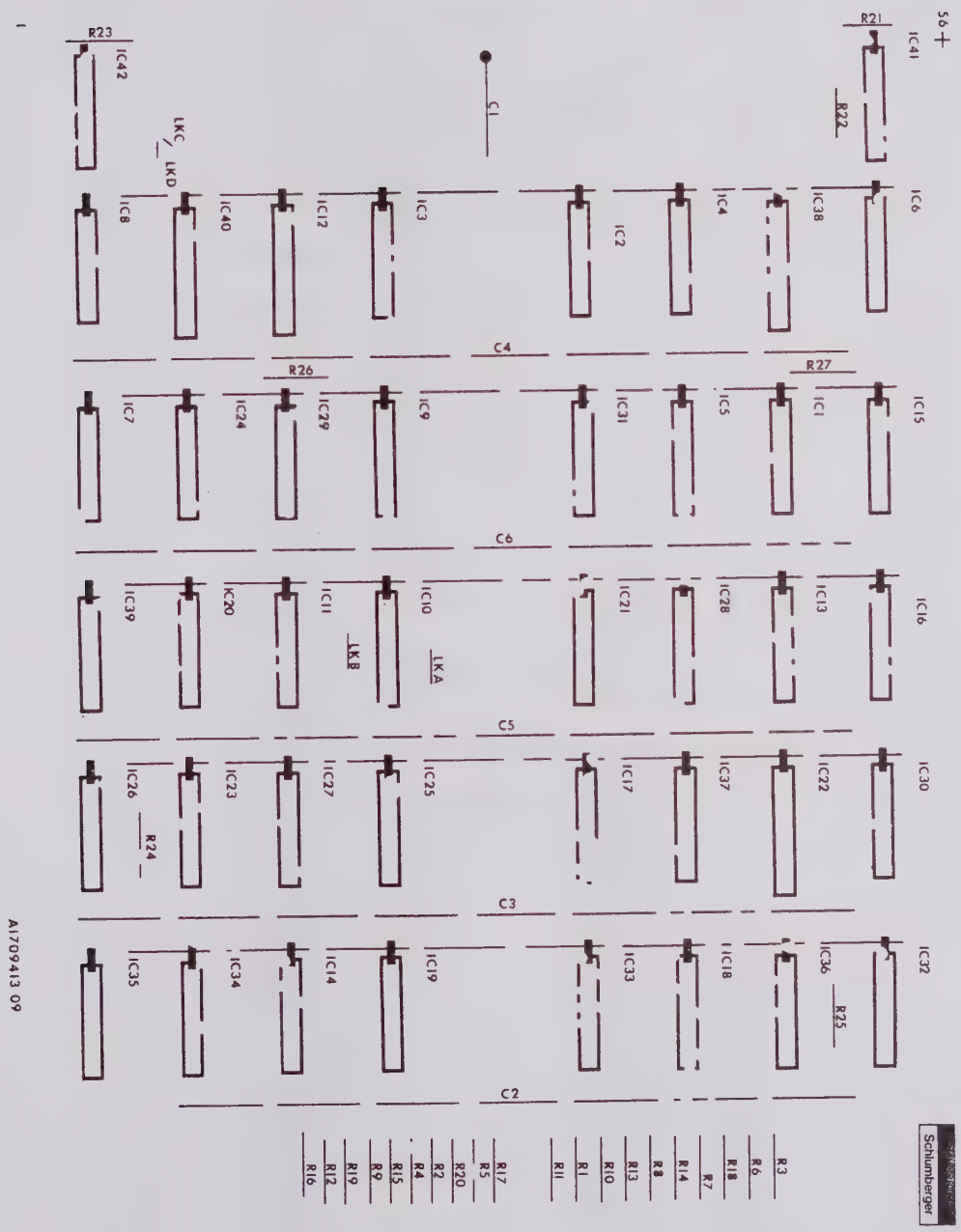
Cct Ref.	General Description				Solartron Part No.
R1 to R12	CACP	560	1/8W	10%	172025600
R13 to R20	CACP	680	1/8W	10%	172026800
R21 to R22	CACP	1k	1/8W	10%	172031000
R23 to R27	CACP	1k	1/8W	10%	172031000
C1	TAND	33	10V		265473300
C2 to C6	CERM	0.047			241944700
IC1	SN7486N				510000650
IC2	SN7486N				510000650
IC3	SN7430N				510000430
IC4	SN7407N				510000750
IC5	SN7407N				510000750
IC6	SN7406N				510000760
IC7	SN7400N				510000340
IC8	SN7474N				510000490
IC9	SN7400N				510000340
IC10	SN7410N				510000420
IC11	SN7420N				510000380
IC12	SN7442N				510000330
IC13 to IC19	SN7401N				510000400
IC20	SN7400N				510000340
IC21	SN7408N				510000830
IC22	SN7408N				510000830
IC23	SN7400N				510000340
IC24	SN7404N				510000410
IC25	SN7404N				510000410
IC26	SN7474N				510000490
IC27	SN7400N				510000340
IC28	SN7404N				510000410
IC29	SN7474N				510000490
IC30	SN7400N				510000340
IC31	SN7400N				510000340
IC32 to IC34	SN7401N				510000400
IC35	SN7400N				510000340
IC36	SN7474N				510000490
IC37	SN7400N				510000340
IC38	SN74175N				510001310
IC39	SN7400N				510000340
IC40	SN7483N				510000840
IC41	SN7407N				510000750
IC42	SN7474N				510000490

EDGE CONNECTORS – 1170, PCB No. 13

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	MAINS SET	
2AB	412	RADIANS	
3A	358	OUTPUT VOLTS EXP STROBE	
6AB	487	SINGLE	
7AB	415	RECYCLE	
8AB	484	SWEEP CMD 2	
9AB	483	SWEEP CMD 1	
10AB	486	SET SWEEP OFF	
11B	476	STOP	
12B	93	D/A LOG F ENABLE	
13A	295	LH DISPLAY STROBE	
13B	95	D/A RH DISPLAY ENABLE	
14A	420	RH DISPLAY STROBE	
14B	94	D/A LH DISPLAY ENABLE	
15AB	416	REJECT BIAS	
16B	297	LH DISPLAY POLARITY STROBE	
17B	421	RH DISPLAY POLARITY STROBE	
18A	99	D — A O/P VOLTS ENABLE	
18B	273	KEYBOARD EQUIV.	
19A	90	D/A ADD BIAS ENABLE	
19B	127	DISPLAY LOG	
20A	100	D — A REJ BIAS ENABLE	
20B	128	DISPLAY CARTES	
21B	608	500kHz	
22A	318	LOCAL STORE SYNC	
22B	490	STORE SYNC	
23A	319	LOCAL 500kHz	
23B	348	MEASURE Y	
24A	92	D/A LATCH STROBE	
24B	347	MEASURE X	
25AB	611	2MHz	
26A	169	FREQ. EXP. STROBE	
32A	170	FREQ. STROBE	
32B	296	LH DISPLAY EXP STROBE	
33A	543	T10 (DIGIT CONTROL)	
33B	283	KEYBOARD STORE ADDRESS 128	
34A	542	T9 (DIGIT CONTROL)	
35A	540	T13 (EQUIV. TIMING)	
36A	539	T12 (EQUIV. TIMING)	
36B	282	KEYBOARD STORE ADDRESS 64	
37A	538	T11 (EQUIV. TIMING)	
37B	546	T10 DELAYED	
38B	545	T9 DELAYED	
39A	529	T8	
39B	530	T8 BUFFERED	
40A	528	T7	
40B	531	T7 BUFFERED	
41A	527	T6	
41B	532	T6 BUFFERED	
42A	526	T5	
42B	533	T5 BUFFERED	
43A	525	T4	
43B	534	T4 BUFFERED	

E.C. No.	INTERCONNECTION LIST DETAIL No.	SIGNAL TITLE	REMARKS
44A	524	T3	
44B	535	T3 BUFFERED	
45A	523	T2	
45B	536	T2 BUFFERED	
46A	522	T1	
46B	537	T1 BUFFERED	
47A	13	ADD BIAS POLARITY STROBE	
47B	281	KEYBOARD STORE ADDRESS 32	
48A	183	GATED KEYBOARD EQUIV.	
48B	280	KEYBOARD STORE ADDRESS 16	
49B	279	KEYBOARD STORE ADDRESS 8	
50B	278	KEYBOARD STORE ADDRESS 4	
51B	277	KEYBOARD STORE ADDRESS 1	
52A	417	REJ BIAS POLARITY	
53AB	342	MOS STORE DATA OUTPUT 8	
54AB	341	MOS STORE DATA OUTPUT 4	
55AB	340	MOS STORE DATA OUTPUT 2	
56AB	339	MOS STORE DATA OUTPUT 1	

COMPONENT LAYOUT, 1170 PCB No. 13



PARTS LIST, 1170 PCB No. 14

Printed Circuit Board A1709114
(Latch Store)

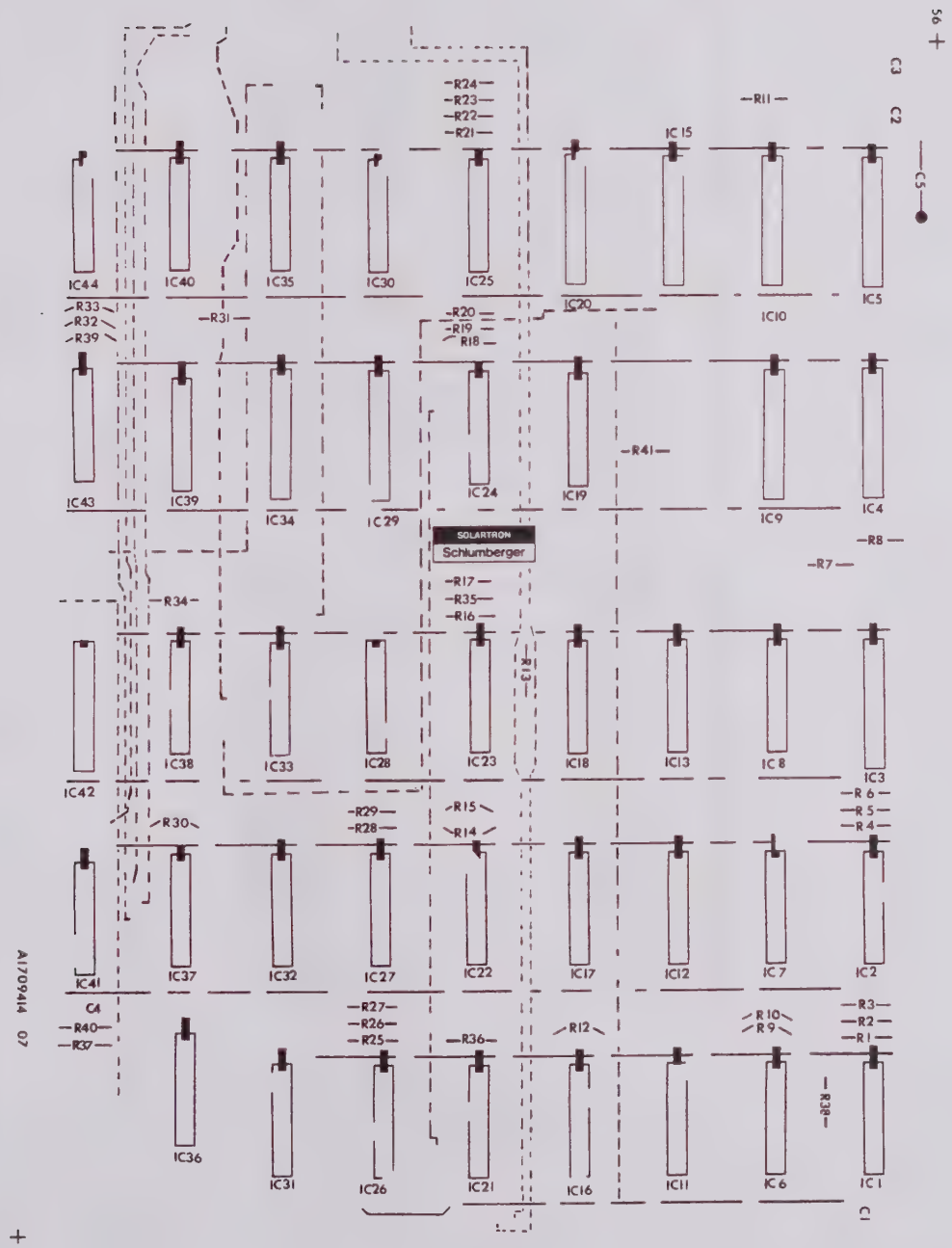
Cct Ref.	General Description				Solartron Part No.
R1 to R12	CACP	680	1/8W	10%	172026800
R13	CACP	1k	1/8W	10%	172031000
R14 to R20	CACP	680	1/8W	10%	172026800
R21 to R24	CACP	2.2k	1/8W	10%	172032200
R25 to R35	CACP	680	1/8W	10%	172026800
R36	CACP	1k	1/8W	10%	172031000
R37 to R40	CACP	680	1/8W	10%	172026800
R41	CACP	1k	1/8W	10%	172031000
C1 to C4	CERM	0.047	25V	20%	241944700
C5	TAND	4.7	10V		265464700
IC1	15846				510000160
IC2	SN7404N				510000410
IC3	SN74155N				510001260
IC4	SN74156N				510001270
IC5	SN74155N				510001260
IC6	SN7400N				510000340
IC7	SN7404N				510000410
IC8	SN7400N				510000340
IC9	SN74156N				510001270
IC10	SN74157N				510001280
IC11	SN7474N				510000490
IC12	SN7401N				510000400
IC13	SN7404N				510000410
IC15	SN74156N				510001270
IC16	SN15862				510000200
IC17	DTuL 946				510000160
IC18	SN7401N				510000400
IC19	SN7413N				510000710
IC20	SN74156N				510001270
IC21	SN7400N				510000340
IC22	SN7474N				510000490
IC23	SN7406N				510000760
IC24	SN7410N				510000420
IC25	SN7440N				510000440
IC26	SN7404N				510000410
IC27	SN7401N				510000400
IC28	SN7404N				510000410
IC29	SN7475N				510000350
IC30	SN7401N				510000400
IC31	SN7410N				510000420
IC32	SN7474N				510000490
IC33	SN7401N				510000400
IC34	SN7475N				510000350
IC35	SN7401N				510000400
IC36	SN7474N				510000490
IC37	SN7401N				510000400
IC38	SN7404N				510000410
IC39	SN7474N				510000490
IC40	SN7404N				510000410
IC41	SN7400N				510000340
IC42	SN7475N				510000350
IC43	SN7401N				510000400
IC44	SN7404N				510000410

EDGE CONNECTORS – 1170, PCB No. 14

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1A	321	MAINS SET	
1B	212	"HIGH"	
2A	248	INTEGRATION TIME 2	
2B	286	KEYBOARD CONTROL TOUCH KEY PULSE	
3A	247	INTEGRATION TIME 1	
3B	240	INPUT RANGE LATCH READ STROBE	
4A	325	MEASURE DELAY 2	
4B	17	AUTORANGE LATCH READ STROBE	
5A	324	MEASURE DELAY 1	
5B	253	INPUT RANGE TOUCH KEY PULSE	
6A	487	SINGLE	
6B	259	INTERNAL LATCH STORE DATA 8	
7A	415	RECYCLE	
7B	258	INTERNAL LATCH STORE DATA 4	
8A	484	SWEEP CMD 2	
8B	257	INTERNAL LATCH STROBE DATA $\overline{2}$	
9A	483	SWEEP CMD 1	
9B	256	INTERNAL LATCH STORE DATA $\overline{1}$	
10A	486	SET SWEEP OFF	
10B	592	0 TOUCH KEY PULSE	
11A	476	STOP	
11B	378	1 — 9 TOUCH KEY PULSE	
12A	163	FORCE MOD	
12B	172	FREQ. RANGE 2	
13A	355	OVERLOAD LATCH READ STROBE	
13B	171	FREQ. RANGE 1	
14A	16	ADD BIAS	
14B	173	FREQ. RANGE TOUCH KEY PULSE	
15A	416	REJECT BIAS	
15B	288	KEYBOARD FUNCTION LATCH READ STROBE	
16A	474	SINE	
16B	287	KEYBOARD FUNCTION TOUCH KEY PULSE	
17A	497	SQUARE	
17B	122	DISABLE DISPLAY	
18AB	273	KEYBOARD EQUIV.	
19AB	127	DISPLAY LOG	
20AB	128	DISPLAY CARTES	
21A	593	1184 FITTED	
21B	506	SWEEP MODE	
22AB	490	STORE SYNC	
23AB	348	MEASURE Y	
24AB	347	MEASURE X	
25AB	611	2MHz	
26A	438	RUN	
26B	251	INVALID	
32A	125	DEMOD	
32B	337	MOD	
33A	165	F.P. SERIAL O/P	
33B	283	KEYBOARD STORE ADDRESS 128	
34A	598	10Hz	
34B	237	INHIBIT DEMOD	
35A	164	F.P. SERIAL O/P	
35B	161	FORCED REMOTE	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
36A	282	KEYBOARD STORE ADDRESS 64	
36B	294	$\overline{\text{LATCH STORE WRITE}}$	
37AB	546	T10 DELAYED	
38AB	545	T9 DELAYED	
39A	530	T8 BUFFERED	
39B	293	LATCH STORE DATA OUTPUT $\overline{8}$	
40A	531	T7 BUFFERED	
40B	292	LATCH STORE DATA OUTPUT $\overline{4}$	
41A	532	T6 BUFFERED	
41B	291	LATCH STORE DATA OUTPUT $\overline{2}$	
42A	533	T5 BUFFERED	
42B	290	LATCH STORE DATA OUTPUT $\overline{1}$	
43A	534	T4 BUFFERED	
43B	317	LATCH STORE DATA INPUT 8	
44A	535	T3 BUFFERED	
44B	316	LATCH STORE DATA INPUT 4	
45A	536	T2 BUFFERED	
45B	315	LATCH STORE DATA INPUT 2	
46A	537	T1 BUFFERED	
46B	314	LATCH STORE DATA INPUT 1	
47AB	281	KEYBOARD STORE ADDRESS 32	
48AB	280	KEYBOARD STORE ADDRESS 16	
49AB	279	KEYBOARD STORE ADDRESS 8	
50AB	278	KEYBOARD STORE ADDRESS 4	
51AB	277	KEYBOARD STORE ADDRESS 1	
52A	422	$\overline{\text{REMOTE}}$	
52B	313	LOG/LIN TOUCH KEY PULSE	
53AB	342	MOS STORE DATA OUTPUT 8	
54AB	341	MOS STORE DATA OUTPUT 4	
55AB	340	MOS STORE DATA OUTPUT 2	
56AB	339	MOS STORE DATA OUTPUT 1	

COMPONENT LAYOUT, 1170 PCB No. 14



PARTS LIST, 1170 PCB No. 15

Printed Circuit Board A1709115
(Keyboard Control)

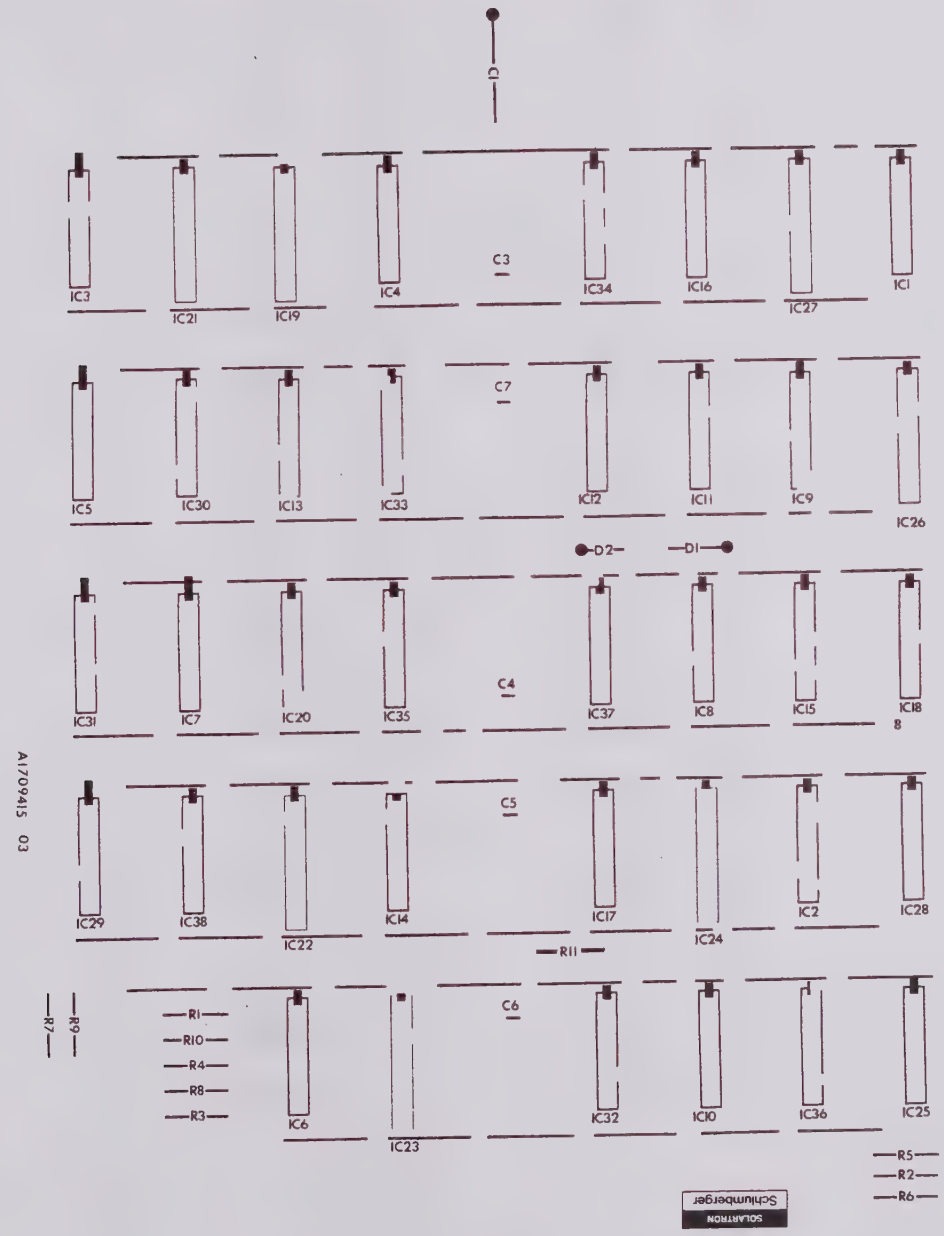
Cct Ref.	General Description				Solartron Part No.
R1 to R4	CACP	2.2k	1/8W	10%	172032200
R5	CACP	680	1/8W	10%	172026800
R6	CACP	2.2k	1/8W	10%	172032200
R7 to R10	CACP	680	1/8W	10%	172026800
R11	CACP	1k	1/8W	10%	172031000
C1	TAND	33			265473300
C3 to C7	CERM	0.047			241944700
D1	SD3				300522160
D2	SD3				300522160
IC1	SN7401N				510000400
IC2	SN7401N				510000400
IC3	SN7410N				510000420
IC4	SN7410N				510000420
IC5	SN 15836				510000290
IC6	SN7401N				510000400
IC7	SN7404N				510000410
IC8	SN7404N				510000410
IC9	SN7404N				510000410
IC10	SN7410N				510000420
IC11 to IC15	SN7400N				510000340
IC16	SN7420N				510000380
IC17	SN7420N				510000380
IC18	SN7450N				510000450
IC19	SN7475N				510000350
IC20	SN74H51				510001180
IC21	SN74157N				510001280
IC22	SN74170N				510001240
IC23	SN7476N				510000500
IC24	SN7476N				510000500
IC25	SN7493N				510000310
IC26	SN7442N				510000330
IC27	SN7442N				510000330
IC28	SN7408N				510000830
IC29	SN7408N				510000830
IC30	SN7400N				510000340
IC31	SN7400N				510000340
IC32	SN7408N				510000830
IC33	SN7408N				510000830
IC34	SN7410N				510000420
IC35	SN7420N				510000380
IC36	SN7401N				510000400
IC37	SN15830N				510000100
IC38	SN7404N				510000410

EDGE CONNECTORS – 1170, PCB No. 15

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1A	212	"HIGH"	
1B	235	INHIBIT FREQ. KB	
2A	286	KEYBOARD CONTROL TOUCH KEY PULSE	
2B	121	DEC POINT	
3A	268	KEYBOARD DISPLAY DATA 8	
3B	65	CLEAR PULSE	
4A	267	KEYBOARD DISPLAY DATA 4	
4B	410	RECALL PULSE	
5A	266	KEYBOARD DISPLAY DATA 2	
5B	139	ENTER PULSE	
6AB	259	INTERNAL LATCH STORE DATA 8	
7AB	258	INTERNAL LATCH STORE DATA 4	
8AB	257	INTERNAL LATCH STORE DATA $\overline{2}$	
9AB	256	INTERNAL LATCH STORE DATA $\overline{1}$	
10A	592	0 TOUCH KEY PULSE	
10B	285	KEYBOARD EGG BOX INHIBIT	
11A	591	1 – 9 TOUCH KEY PULSE	
11B	264	KEYBOARD DIGIT PULSE	
12AB	172	FREQ. RANGE 2	
13AB	171	FREQ. RANGE 1	
14AB	173	FREQ. RANGE TOUCH KEY PULSE	
15AB	288	KEYBOARD FUNCTION LATCH READ STROBE	
16AB	287	KEYBOARD FUNCTION TOUCH KEY PULSE	
17AB	122	DISABLE DISPLAY	
18A	273	KEYBOARD EQUIV.	
18B	265	KEYBOARD DISPLAY DATA 1	
19AB	127	DISPLAY LOG	
20AB	128	DISPLAY CARTES	
21A	506	SWEEP MODE	
21B	485	SWEEP MODE STROBE	
22AB	490	STORE SYNC	
23AB	348	MEASURE Y	
24AB	347	MEASURE X	
25AB	611	2MHz	
26AB	438	RUN	
32A	68	CHANGE FREQ.	
33A	283	KEYBOARD STORE ADDRESS 128	
33B	141	ENTER BISTABLE	
34A	554	VOLTS (KEYBOARD)	
34B	411	RECALL BISTABLE	
35A	166	FREQ. (KEYBOARD)	
35B	284	KEYBOARD EXPONENT DECADE	
36A	282	KEYBOARD STORE ADDRESS 64	
36B	146	EXPONENT ENTER ENABLE	
37AB	546	T10 DELAYED	
38AB	545	T9 DELAYED	
39AB	293	LATCH STORE DATA OUTPUT $\overline{8}$	
40AB	292	LATCH STORE DATA OUTPUT $\overline{4}$	
41AB	291	LATCH STORE DATA OUTPUT $\overline{2}$	
42AB	290	LATCH STORE DATA OUTPUT $\overline{1}$	
43A	140	END OF ENTER	
44B	276	KEYBOARD FUNCTION 4	
45B	275	KEYBOARD FUNCTION 2	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
46A	183	GATED KEYBOARD EQUIV.	
46B	274	KEYBOARD FUNCTION 1	
47A	281	KEYBOARD STORE ADDRESS 32	
47B	327	MOS STORE WRITE	
48A	280	KEYBOARD STORE ADDRESS 16	
48B	346	MOS STORE DATA INPUT 8	
49A	279	KEYBOARD STORE ADDRESS 8	
49B	345	MOS STORE DATA INPUT 4	
50A	278	KEYBOARD STORE ADDRESS 4	
50B	344	MOS STORE DATA INPUT 2	
51A	277	KEYBOARD STORE ADDRESS 1	
51B	343	MOS STORE DATA INPUT 1	
52AB	313	LOG/LIN TOUCH KEY PULSE	
53AB	342	MOS STORE DATA OUTPUT 8	
54AB	341	MOS STORE DATA OUTPUT 4	
55AB	340	MOS STORE DATA OUTPUT 2	
56AB	339	MOS STORE DATA OUTPUT 1	

COMPONENT LAYOUT, 1170 PCB No. 15



PARTS LIST, 1170 PCB No. 16

Printed Circuit Board A1709116
(Keyboard Exponent)

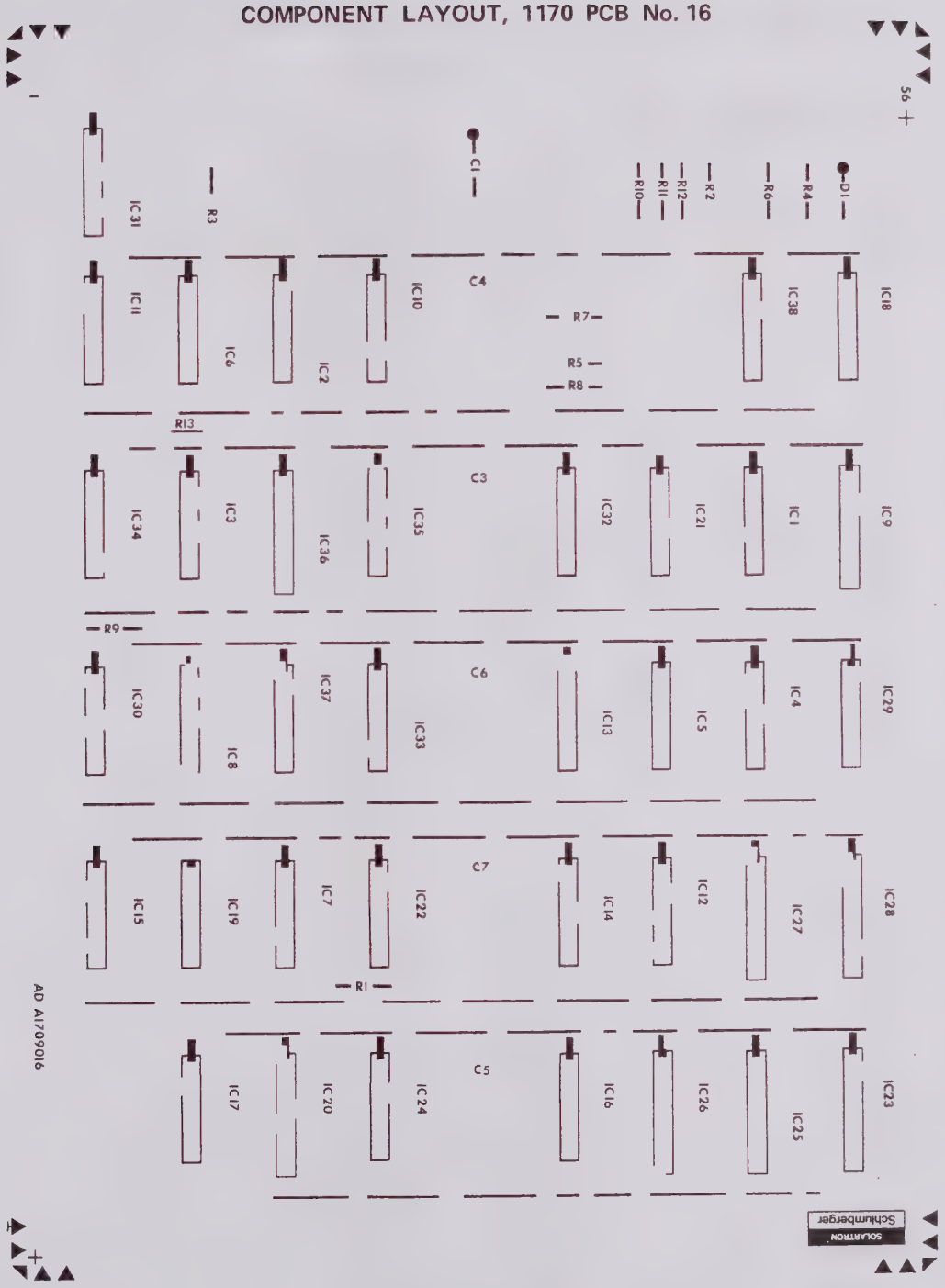
Cct Ref.	General Description				Solartron Part No.
R1	CACP	1k	1/8W	10%	172031000
R2	CACP	680	1/8W	10%	172026800
R3	CACP	1k	1/8W	10%	172031000
R4 to R8	CACP	2.2k	1/8W	10%	172032200
R9	CACP	680	1/8W	10%	172026800
R10 to R12	CACP	2.2k	1/8W	10%	172032200
R13	CACP	1k	1/8W	10%	172031000
C1	TAND	33	10V	20%	265473300
C3 to C7	CERM	0.047			241944700
D1	SD3				300522160
IC1	SN7408N				510000830
IC2	SN7404N				510000410
IC3	SN7407N				510000750
IC4	SN7400N				510000340
IC5	SN7410N				510000420
IC6	SN7401N				510000400
IC7	SN15830N				510000100
IC8	SN15830N				510000100
IC9	SN7475N				510000350
IC10	SN7408N				510000830
IC11	SN7400N				510000340
IC12	SN7420N				510000380
IC13	SN7402N				510000270
IC14	SN7400N				510000340
IC15	SN7404N				510000410
IC16	SN7400N				510000340
IC17	SN7408N				510000830
IC18	SN7401N				510000400
IC19	SN15862N				510000200
IC20	SN74157N				510001280
IC21	SN15830N				510000100
IC22	SN7410N				510000420
IC23	SN74157N				510001280
IC24	SN7408N				510000830
IC25	SN7483N				510000840
IC26	SN7483N				510000840
IC27	SN74157N				510001280
IC28	SN7475N				510000350
IC29	SN7401N				510000400
IC30 to IC32	SN7474N				510000490
IC33	SN7404N				510000410
IC34	SN7408N				510000830
IC35	SN7401N				510000400
IC36	SN7475N				510000350
IC37	SN7400N				510000340
IC38	SN7408N				510000830

EDGE CONNECTORS – 1170, PCB No. 16

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1A	212	"HIGH"	
1B	209	mHz NEON	
2A	121	DEC POINT	
2B	553	VOLTS NEON	
3A	65	CLEAR PULSE	
3B	328	MHz NEON	
4A	410	RECALL PULSE	
4B	289	kHz NEON	
5A	139	ENTER PULSE	
6AB	259	INTERNAL LATCH STORE DATA 8	
7AB	258	INTERNAL LATCH STORE DATA 4	
8AB	257	INTERNAL LATCH STORE DATA $\overline{2}$	
9AB	256	INTERNAL LATCH STORE DATA $\overline{1}$	
10A	285	KEYBOARD EGG BOX INHIBIT	
10B	213	Hz NEON	
11A	264	KEYBOARD DIGIT PULSE	
12A	172	FREQ. RANGE 2	
12B	93	D/A LOG F ENABLE	
13A	171	FREQ. RANGE 1	
13B	272	KEYBOARD DISPLAY EXP 8	
14A	173	FREQ. RANGE TOUCH KEY PULSE	
14B	271	KEYBOARD DISPLAY EXP 4	
15A	288	KEYBOARD FUNCTION LATCH READ STROBE	
15B	270	KEYBOARD DISPLAY EXP 2	
16A	287	KEYBOARD FUNCTION TOUCH KEY PULSE	
16B	297	LH DISPLAY POLARITY STROBE	
17A	122	DISABLE DISPLAY	
18B	122	DISABLE DISPLAY	
17B	421	RH DISPLAY POLARITY STROBE	
19AB	127	DISPLAY LOG	
20AB	128	DISPLAY CARTES	
21A	485	SWEEP MODE STROBE	
21B	252	INDICATE OVERLOAD	
22AB	490	STORE SYNC	
23A	348	MEASURE Y	
23B	269	KEYBOARD DISPLAY EXP 1	
24A	347	MEASURE X	
24B	301	LH DISPLAY EXP 8	
25AB	611	2MHz	
26A	69	COMPUTE	
26B	438	RUN	
32A	618	10MHz UNIT	
32B	296	LH DISPLAY EXPT STROBE	
33A	141	ENTER BISTABLE	
33B	300	LH DISPLAY EXP 4	
34A	411	RECALL BISTABLE	
35A	284	KEYBOARD EXPONENT DECADE	
36A	146	EXPONENT ENTER ENABLE	
37AB	546	T10 DELAYED	
38AB	545	T9 DELAYED	
39AB	293	LATCH STORE DATA OUTPUT $\overline{8}$	
40AB	292	LATCH STORE DATA OUTPUT $\overline{4}$	
41AB	291	LATCH STORE DATA OUTPUT $\overline{2}$	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
42AB	290	LATCH STORE DATA OUTPUT $\overline{1}$	
44A	276	KEYBOARD FUNCTION 4	
45A	275	KEYBOARD FUNCTION 2	
45B	299	LH DISPLAY EXP 2	
46A	274	KEYBOARD FUNCTION 1	
46B	298	LH DISPLAY EXP 1	
47AB	327	$\overline{\text{MOS STORE WRITE}}$	
48AB	346	MOS STORE DATA INPUT 8	
49AB	345	MOS STORE DATA INPUT 4	
50AB	344	MOS STORE DATA INPUT 2	
51AB	343	MOS STORE DATA INPUT 1	
52AB	313	LOG/LIN TOUCH KEY PULSE	
53AB	342	MOS STORE DATA OUTPUT 8	
54AB	341	MOS STORE DATA OUTPUT 4	
55AB	340	MOS STORE DATA OUTPUT 2	
56AB	339	MOS STORE DATA OUTPUT 1	

COMPONENT LAYOUT, 1170 PCB No. 16



PARTS LIST, 1170 PCB No. 17

Printed Circuit Board A1709117
(Autorange Digit and D/A)

Cct Ref.	General Description				Solartron Part No.
R1	CACP	10k	1/8W	10%	172041000
R2	CACP	39k	1/8W	10%	172043900
R3	MEOX	12k	1/4W	5%	195641200
R4 to R7	CACP	1k	1/8W	10%	172031000
R8	CACP	47	1/8W	10%	172014700
R9 to R11	CACP	330	1/8W	10%	172023300
R12 to R17	CACP	1k	1/8W	10%	172031000
R18	CACP	100	1/8W	10%	172021000
R19	CACP	100	1/8W	10%	172021000
C3	CERM	10000p	500V	20%	241941000
C4	CERM	330p	500V	20%	241323300
C5	CERM	330p	500V	20%	241323300
C6	CERM	100p	500V	20%	241321000
C7	PTFE Variable	2/12p	500V		290060030
C8 to C11	CERM	0.047	25V	−20% +10%	241944700
C12	TAND	33	10V	20%	265473300
C13	TAND	3.3	15V	20%	265663300
C14	CERM	150p	500V	20%	241321500
D1 to D2	SD3				300522160
TR1 to TR4	BCY70				300553590
IC1	SN74121				510000530
IC2	SN74121				510000530
IC3	SN74121				510000530
IC4	SN7475				510000350
IC5	SN7475				510000350
IC6	SN7400				510000340
IC7 to IC9	SN7410				510000420
IC10	SN7408				510000830
IC11	SN7476				510000500
IC12	SN7490				510000280
IC13	SN7404				510000410
IC14	SN7420				510000380
IC15	SN7404				510000410
IC16	SN7490				510000280
IC17	SN74191				510000940
IC18	SN7430				510000430
IC19	SN7430				510000430
IC20	SN7420				510000380
IC21	15936				510000290
IC22	SN7408				510000830
IC23	SN7404				510000410
IC24	SN7406				510000760
IC25	SN7408				510000830
IC26	SN7404				510000410
IC27	SN74121				510000530
IC28	SN7490				510000280
IC29	SN7401				510000400
IC30	SN74157				510001280
IC31	SN7404				510000410
IC32	SN7400				510000340
IC33	SN7475				510000350
IC34	SN7406				510000760
IC35	SN7404				510000410
IC36	SN7450				510000450
IC37	SN7400				510000340
IC38	SN7474				510000490

EDGE CONNECTORS – 1170, PCB No. 17

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	MAINS SET	
2B	260	INPUT OVERLOAD	
3A	240	INPUT RANGE LATCH READ STROBE	
4A	17	AUTORANGE LATCH READ STROBE	
5A	253	INPUT RANGE TOUCH KEY PULSE	
6A	259	INTERNAL LATCH STORE DATA 8	
6B	312	LATCHED OVERLOAD	
7A	258	INTERNAL LATCH STORE DATA 4	
7B	427	RESET RANGE	
8A	257	INTERNAL LATCH STORE DATA $\overline{2}$	
8B	232	INC RANGE	
9A	256	INTERNAL LATCH STORE DATA $\overline{1}$	
9B	424	RESET OVERLOAD	
11A	93	D/A LOG F ENABLE	
12A	95	D/A RH DISPLAY ENABLE	
12B	174	FRONT PANEL SYNC	
13A	94	D/A LH DISPLAY ENABLE	
14A	355	OVERLOAD LATCH READ STROBE	
15AB	598	10Hz	
16A	297	LH DISPLAY POLARITY STROBE	
16B	632	–11V	
17A	122	DISABLE DISPLAY	
17B	90	D/A ADD BIAS ENABLE	
18A	99	D – A O/P VOLTS ENABLE	
18B	100	D – A REJ BIAS ENABLE	
19AB	127	DISPLAY LOG	
20AB	128	DISPLAY CARTES	
21A	252	INDICATE OVERLOAD	
21B	450	SAMPLE ADD BIAS	
22AB	490	STORE SYNC	
23B	91	D/A RESET	
24A	92	D/A LATCH STROBE	
24B	96	D/A MARK-SPACE	
25AB	611	2MHz	
26AB	438	RUN	
32A	10	AUTORANGE OVERLOAD	
32B	186	GENERATOR D/A MARK-SPACE	
33A	425	REJECT BIAS D/A RESET	
33B	426	REJECT BIAS D/A RESET	
34A	451	SAMPLE OUTPUT VOLTS	
34B	187	GENERATOR D/A MARK-SPACE	
35A	455	SAMPLE REJ BIAS	
35B	456	SAMPLE REJ BIAS	
36B	102	D – A SAMPLE LH DISPLAY	
37A	546	T10 DELAYED	
37B	103	D – A SAMPLE RH DISPLAY	
38A	545	T9 DELAYED	
38B	101	D – A SAMPLE LOG F	
39AB	293	LATCH STORE DATA OUTPUT $\overline{8}$	
40AB	292	LATCH STORE DATA OUTPUT $\overline{4}$	
41AB	291	LATCH STORE DATA OUTPUT $\overline{2}$	
42AB	290	LATCH STORE DATA OUTPUT $\overline{1}$	
43AB	241	INPUT RANGE 1	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
44AB	242	INPUT RANGE 2	
45AB	243	INPUT RANGE 4	
46AB	327	MOS STORE WRITE	
47AB	346	MOS STORE DATA INPUT 8	
48AB	345	MOS STORE DATA INPUT 4	
49AB	344	MOS STORE DATA INPUT 2	
50AB	343	MOS STORE DATA INPUT 1	
51B	414	REJECT BIAS D/A MARK-SPACE	
52B	419	REJECT BIAS D/A MARK-SPACE	
53AB	342	MOS STORE DATA OUTPUT 8	
54AB	341	MOS STORE DATA OUTPUT 4	
55AB	340	MOS STORE DATA OUTPUT 2	
56AB	339	MOS STORE DATA OUTPUT 1	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

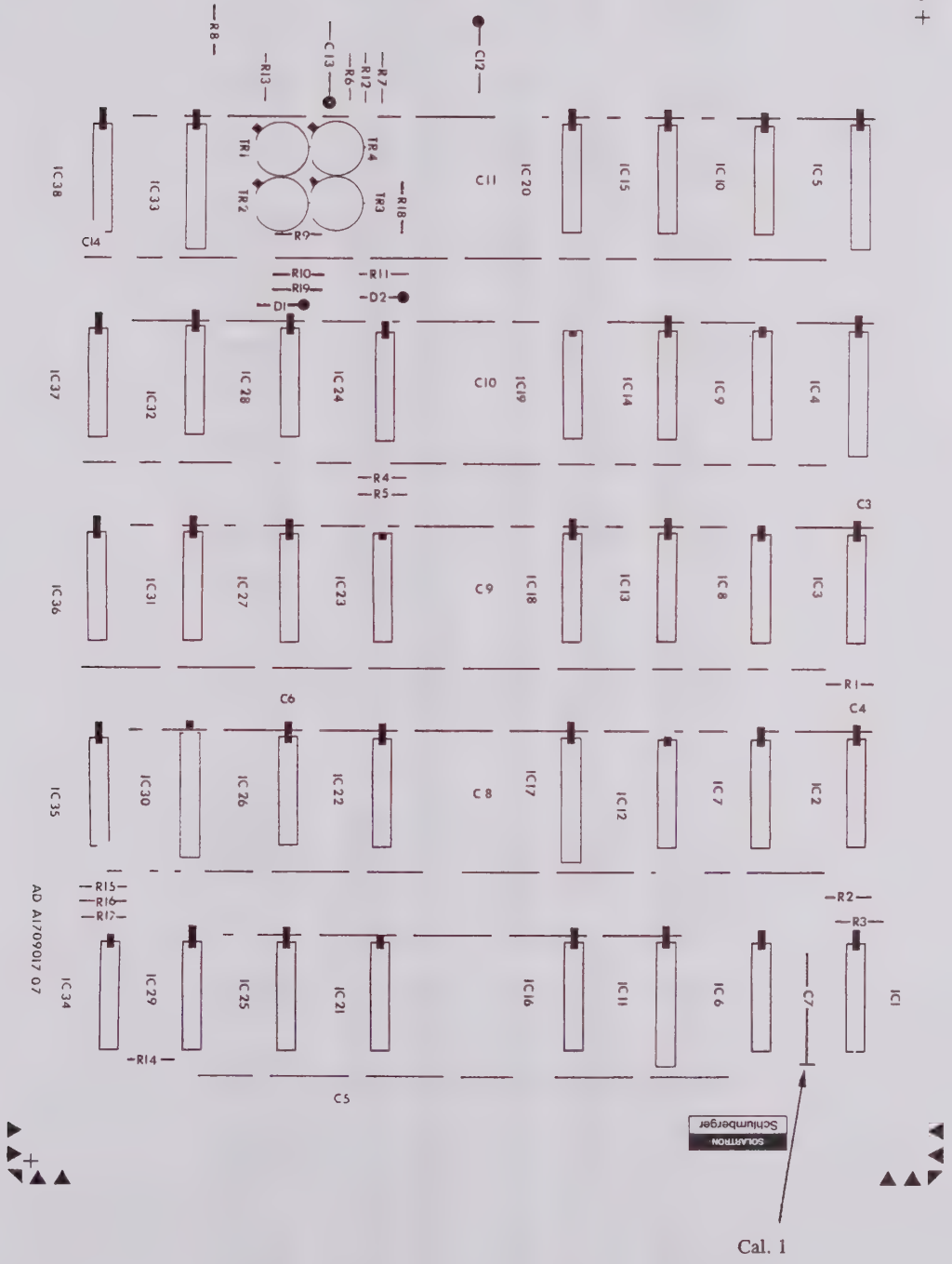
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1170 PCB No. 17 AUTORANGE DIG. D/A

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	C7	72	13.1.10 16.3.8	Sets the D/A mark-space ratio. Adjusted in association with Cal. 4, 5 & 6 of 1172 pcb 2.

COMPONENT LAYOUT, 1170 PCB No. 17



Calibration information is given in Section 3.

PARTS LIST, 1170 PCB No. 23

for

Printed Circuit Board A1709123
(Input Bias)

Cct Ref.	General Description				Solartron Part No.
R1 to R4	CACP	22k	1/8W	10%	172042200
R5	MEOX	1.5k	1/2W	1%	195431500
R6	MEOX	1.5k	1/2W	1%	195431500
R7	MEFM	2.7k	1/8W	1%	191232702
R8	MEFM	270	1/8W	1%	191222702
R9	MEFM	33	1/8W	1%	191213302
R10	MEOX	330	1/4W	5%	195623300
R11	MEFM	4.3k	1/8W	0.5%	192734301
R12	CACP	1k	1/8W	10%	172031000
R13	CACP	22	1/8W	10%	172012200
R14	MEOX	2.7k	1/4W	5%	195632700
R15	MEFM	1M	1/8W	1%	191261002
R16	MEFM	43k	1/8W	0.5%	192744301
R17	CACP	3.9k	1/8W	10%	172033900
R18	CACP	6.8k	1/8W	10%	172036800
R19	CACP	6.8k	1/8W	10%	172036800
R20	CACP	1.5k	1/8W	10%	172031500
R21	CACP	1.5k	1/8W	10%	172031500
R22	CACP	2.2k	1/8W	10%	172032200
R23	MEFM	10k	1/4W	0.1%	198141004
R24	MEFM	10k	1/4W	0.1%	198141004
R25	MEFM	4.3k	1/4W	0.5%	198234301
R26	MEFM	4.3k	1/4W	0.5%	198234301
R27	MEFM	10k	1/4W	0.1%	198141004
R28	MEFM	10k	1/4W	0.1%	198141004
R29	MEOX	4.7k	1/4W	5%	195634700
R30	MEFM	10k	1/4W	0.1%	198141004
R31	MEFM	2.7k	1/8W	1%	191232702
R32	MEFM	4.7k	1/8W	1%	191234702
R33	MEFM	3.9k	1/4W	0.1%	198133904
R34	MEFM	1.8k	1/8W	1%	191231802
R35	MEOX	2.7k	1/4W	5%	195632700
R36	CACP	33k	1/8W	10%	172043300
R37	CACP	330k	1/8W	10%	172053300
R38 to R43	CACP	56k	1/8W	10%	172045600
R44	CACP	1k	1/8W	10%	172031000
R45	CACP	1k	1/8W	10%	172031000
R46	CACP	220	1/8W	10%	172022200
R47	CACP	100k	1/8W	10%	172051000
R48	CACP	100k	1/8W	10%	172051000
R49	CACP	10k	1/8W	10%	172041000
R50 to R55	CACP	560	1/8W	10%	172025600
R56	CACP	33k	1/8W	10%	172043300
R57	CACP	33k	1/8W	10%	172043300
R60	CACP	2.2k	1/8W	10%	172032200
R61	CACP	22k	1/8W	10%	172042200
R62	CACP	22k	1/8W	10%	172042200
R63	MEOX	10k	1/4W	5%	195641000
R64	MEFM	10k	1/4W	0.1%	198141004
R65	MEFM	100k	1/8W	1%	191251002
R66	MEOX	100k	1/4W	5%	195651000
R67	MEFM	330	1/8W	1%	191223302
R68	MEFM	3.3k	1/8W	1%	191233302
R69	CACP	1K	1/8W	10%	172031000
R70	MEOX	2.2k	1/4W	5%	195632200
R71	MEFM	3k	1/4W	1%	198333004
R72	MEFM	1800	1/8W	1%	191231804
R73	MEFM	680	1/4W	1%	198326802
R74	MEOX	330	1/4W	5%	195623300
R75	CACP	1k	1/8W	10%	172031000
R76	CACP	1k	1/8W	10%	172031000
R77	CACP	470	1/8W	10%	172024700

PARTS LIST, 1170 PCB No. 23

Cct Ref.	General Description				Solartron Part No.
R78	CACP	5.6k	1/8W	10%	172035600
R79	CACP	4.7k	1/8W	10%	172034700
R80	CACP	2.7k	1/8W	10%	172032700
R81	CACP	3.9k	1/8W	10%	172033900
R82	CACP	1k	1/8W	10%	172031000
R83	CACP	5.6k	1/8W	10%	172035600
R84	CACP	4.7k	1/8W	10%	172034700
R85	CACP	2.7k	1/8W	10%	172032700
R86	CACP	3.9k	1/8W	10%	172033900
R87	CACP	1k	1/8W	10%	172031000
R88	CACP	220	1/4W	10%	172322200
R89	CACP	470k	1/8W	10%	172054700
R90	CACP	47	1/8W	10%	172014700
R91	CACP	10	1/8W	10%	172011000
R92	CACP	100	1/8W	10%	172021000
R93	CACP	220	1/8W	10%	172022200
R94	CACP	470	1/8W	10%	172024700
R95	CACP	1k	1/8W	10%	172031000
R96	CACP	330	1/8W	10%	172023300
R97	CACP	330	1/8W	10%	172023300
R98	CACP	1k	1/8W	10%	172031000
R99	CACP	1k	1/8W	10%	172031000
R100	CACP	330	1/8W	10%	172023300
R101	CACP	330	1/8W	10%	172023300
R102	CACP	1k	1/8W	10%	172031000
R103	CACP	330	1/8W	10%	172023300
R104 to R106	CACP	1.8k	1/8W	10%	172031800
RV1	CMPM	1k	1/2W	10%	130631000
RV2	CMPM	20k	1/2W	10%	130642000
RV3	CMPM	10k	1/2W	10%	130641000
RV4	CMPM	10k	1/2W	10%	130641000
RV5	CMPM	2k	1/2W	10%	130632000
RV6	CMPM	2k	1/2W	10%	130632000
RV7	CMPM	500	1/2W	10%	130625000
C1	CERM	0.047	25V	-20% +10%	241944700
C2	CERM	0.047	25V	-20% +10%	241944700
C3	ESTF	1000p	400V	10%	222331000
C4	ESTF	220p	125V	10%	210222200
C5	ESTF	470p	400V	10%	222324700
C6	ESTF	470p	400V	10%	222324700
C7	CERM	220p	500V	20%	241322200
C8	CERM	68p	500V	20%	241316800
C9 to C11	CERM	0.047	25V	-20% +10%	241944700
C12	ESTM	0.022	100V	10%	225442200
C13 to C22	CERM	0.047	25V	-20% +10%	241944700
C23	CERM	2200p	500V	25%	208450065
C24	CERM	33p	500V	20%	241313300
C25	MICA	0.1	350V	1%	208500034
C26	ESTM	0.1	100V	10%	225451000
C27	CERM	0.047	25V	-20% +10%	241944700
C28	CERM	0.047	25V	-20% +10%	241944700
C29 to C31	TAND	47	20V	20%	265874700
C32	CERM	470p	500V	20%	241324700
C33	CERM	470p	500V	20%	241324700
C34 to C36	CERM	0.047	25V	-20% +10%	241944700
C37	ESTM	0.01	160V	10%	221341000
D1 to D18	SD3				300522160
D19	SZD 2.7				300523870
D21	SD3				300522160
D22	SD3				300522160
D23	IN3062				300524320
D24	SD3				300522160
D25	IN3062				300524320
D26	IN3062				300524320
D27	IN825				300523050
D32	SZD 5.1				300521310

PARTS LIST, 1170 PCB No. 23

Cct Ref.	General Description	Solartron Part No.
D35	2.7V Zener	300523870
TR1 to TR4	2N4303	300553160
TR5 to TR10	U1897E	300553800
TR11	BCY70	300553590
TR12	BCY70	300553590
IC1	310	510090040
IC2	715c DIL	510090140
IC3	RCA CA3039	510000320
IC4	74/c	510000591
IC5	74/c	510000591
IC6	310	510090040
IC7	301A	510000620
IC8	741c	510000591
IC9	7400	510000340
IC11	7406	510000760
IC12	74L00	510001030
IC13	74L04	510001040
IC14	7406	510000760
IC15	74L00	510001030
IC16	74L04	510001040
IC17	MC10116	510004330
IC18 to IC23	Optical coupler	300540140
T1	Pulse Transformer	309605803
T2	Pulse Transformer	309605502
T3	Pulse Transformer	309605502
T4	Pulse Transformer	309605803
L1	Inductor 680 280mA 10%	305020390
L2	Inductor 680 280mA 10%	305020390

EDGE CONNECTORS – 1170, PCB No. 23

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	236	INPUT LO	
2AB	418	REJECT BIAS VOLTS	
4AB	82	CORRELATOR 10V REF	
5AB	83	CORRELATOR 10.6V REF	
7AB	575	X 1.57	
8AB	574	X 1.11	
9AB	573	X 1	
10AB	84	CORRELATOR —15V	
11AB	85	CORRELATOR —10V	
12AB	86	CORRELATOR 0V	
13AB	87	CORRELATOR +15V	
17AB	632	0V	
18AB	632	+5V	
19AB	125	DEMOD	
20AB	456	$\overline{\text{SAMPLE REJ BIAS}}$	
21AB	455	SAMPLE REJ BIAS	
22AB	61	$\overline{\text{CORRELATOR CARRIER MARK-SPACE}}$	
23AB	62	CORRELATOR CARRIER MARK-SPACE	
24AB	426	$\overline{\text{REJECT BIAS D/A RESET}}$	
25AB	425	REJECT BIAS D/A RESET	
26AB	414	$\overline{\text{REJECT BIAS D/A MARK-SPACE}}$	
27AB	419	REJECT BIAS D/A MARK-SPACE	
28AB	417	REJ BIAS POLARITY	
29AB	50	BIAS RANGE A	
30AB	51	BIAS RANGE B	
31AB	323	$\overline{\text{MEASURE BIAS}}$	
32AB	210	$\overline{\text{HET ON}}$	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

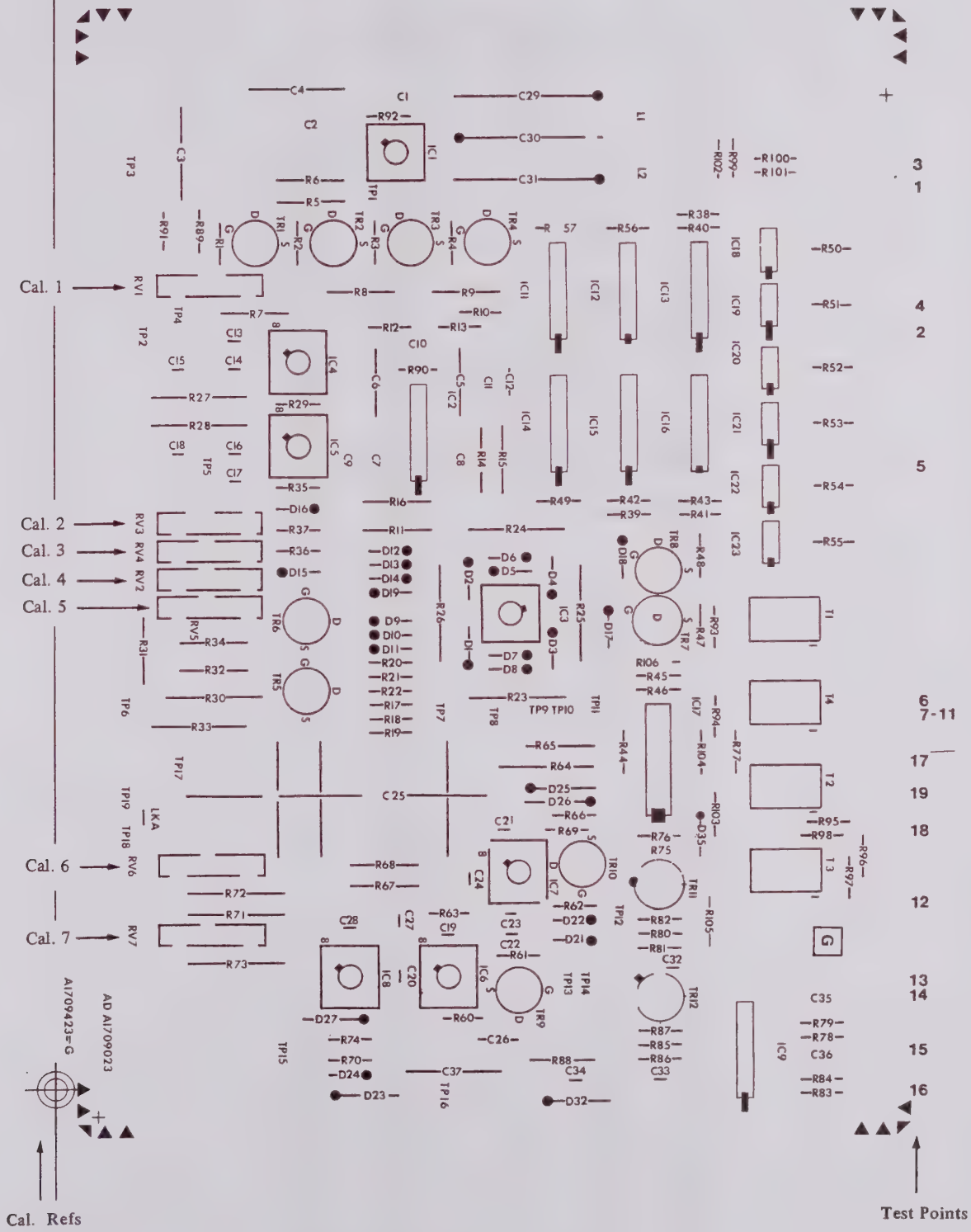
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1170 PCB No. 23 INPUT BIAS

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	RV1	24/CBA	11.0.67 17.3.2	Sets bias reject offset to zero volts.
2	RV3	23/CRG	11.0.6	Sets zero offset on IC4.
3	RV4	23/CRG	11.0.6	Sets zero offset on IC5.
4	RV2	23/CMA	11.0.6/7	Sets zero offset on IC2.
5	RV5	23/CRG	11.0.8	Sets carrier amplitude. Used only in conjunction with 1184. Mod/ Demod unit.
6	RV6	22/CRB	11.0.9 17.5.1	Sets bias reject.
7	RV7	22/CRA	11.0.4 17.3.1	Sets reference voltages.

COMPONENT LAYOUT, 1170 PCB No. 23



Calibration information is given in Section 3.

PARTS LIST, 1170 PCB No. 24

Printed Circuit Board A1709124
(Input Amplifier)

Cct Ref.	General Description				Solartron Part No.
R1	MEFM	495k	1/4W	0.02%	160400535
R2	MEFM	9k	0.4W	0.02%	160400534
R3	MEFM	1k	0.4W	0.02%	160400532
R4	CACP	100k	1/4W	10%	172351000
R5	CACP	100	1/8W	10%	172021000
R6	MEFM	82k	1/8W	1%	191248202
R7	MEFM	82k	1/8W	1%	191248202
R8	MEFM	22k	1/8W	1%	191242202
R9	CACP	47	1/8W	10%	172014700
R10	CACP	100	1/8W	10%	172021000
R11	MEFM	2.7k	1/4W	0.1%	198132704
R12	MEFM	300	1/4W	0.1%	198123004
R13	MEOX	82k	1/4W	5%	195648200
R14	CACP	680k	1/8W	10%	172056800
R15	MEOX	82k	1/4W	5%	195648200
R16	CACP	680k	1/8W	10%	172056800
R17	CACP	1M	1/8W	10%	172061000
R18	MEOX	100k	1/4W	5%	195651000
R19	MEOX	10k	1/4W	5%	195641000
R20	MEFM	2.7k	0.4W	0.02%	160400533
R21	MEFM	300	0.4W	0.02%	160400531
R22 to R25	CACP	100k	1/8W	10%	172051000
R26	CACP	22k	1/8W	10%	172042200
R27	CACP	47	1/8W	10%	172014700
R28	CACP	100	1/8W	10%	172021000
R29	MEFM	91k	1/4W	0.5%	198249104
R30	MEFM	10k	1/4W	1%	198341004
R31	MEFM	100k	1/4W	1%	198351004
R32	MEFM	10k	1/4W	1%	198341004
R33	MEFM	150k	1/4W	1%	198351504
R34	MEFM	10k	1/4W	1%	198341004
R35 to R37	CACP	22k	1/8W	10%	172042200
R38 to R40	CACP	100k	1/8W	10%	172051000
R41 to R43	CACP	56k	1/8W	10%	172045600
R44 to R46	CACP	560	1/8W	10%	172025600
R47 to R50	CACP	470	1/8W	10%	172024700
R51 to R53	MEFM	10k	1/4W	0.5%	198241001
R54	MEOX	6.8k	1/4W	5%	195636800
R55	MEFM	4.7k	1/4W	0.5%	198234704
R56	MEFM	4.7k	1/4W	0.5%	198234704
R57	CACP	10k	1/8W	10%	172041000
R59	CACP	3.3k	1/8W	10%	172033300
R60	CACP	3.3k	1/8W	10%	172033300
R61	MEFM	2.7k	1/4W	0.5%	198232700
R62	MEFM	6.8k	1/8W	1%	191236802
R63	CACP	1.5k	1/8W	10%	172031500
R64	CACP	100	1/8W	10%	172021000
R65	CACP	6.8k	1/8W	10%	172036800
R66	MEOX	6.8k	1/4W	5%	195636800
R67	CACP	10k	1/8W	10%	172041000
R68	CACP	10k	1/8W	10%	172041000
R69	CACP	1k	1/8W	10%	172031000
R70	CACP	47k	1/8W	10%	172044700

PARTS LIST, 1170 PCB No. 24

Cct Ref.	General Description				Solartron Part No.
R71	CACP	47k	1/8W	10%	172044700
R72	CACP	100	1/8W	10%	172021000
R73	CACP	22	1/8W	10%	172012200
R74	CACP	1k	1/8W	10%	172031000
R75	CACP	10k	1/8W	10%	172041000
R76	CACP	10k	1/8W	10%	172041000
R77	CACP	1.8k	1/8W	10%	172031800
R78	MEOX	100	1/2W	5%	193521000
R79	CACP	5.6k	1/8W	10%	172035600
R80	CACP	4.7k	1/8W	10%	172034700
R81	CACP	10k	1/8W	10%	172041000
R82	CACP	5.6k	1/8W	10%	172035600
R83	CACP	4.7k	1/8W	10%	172034700
R84	CACP	10k	1/8W	10%	172041000
R85	MEFM	10k	1/8W	1%	191241002
R86	MEFM	3.3k	1/8W	1%	191233302
R87	MEFM	3.3k	1/8W	1%	191233302
R88	MEFM	8.2k	1/8W	1%	191238202
R89	MEFM	15k	1/8W	1%	191241502
R90	CACP	18k	1/8W	10%	172041800
R91	MEOX	150k	1/4W	5%	195651500
R92	MEOX	150k	1/4W	5%	195651500
R93	MEFM	9.1k	1/8W	0.5%	192739102
R94	MEFM	1k	1/8W	1%	191231002
R95	CACP	1.8k	1/8W	10%	172031800
R96	CACP	47k	1/8W	10%	172044700
R97	CACP	1k	1/8W	10%	172031000
R98	CACP	330	1/8W	10%	172023300
R99	CACP	330	1/8W	10%	172023300
R100	CACP	1k	1/8W	10%	172031000
R101	CACP	1k	1/8W	10%	172031000
R102	CACP	330	1/8W	10%	172023300
R103 to R105	CACP	1k	1/8W	10%	172031000
R106	CACP	330	1/8W	10%	172023300
R107	CACP	330	1/8W	10%	172023300
R108	CACP	10k	1/8W	10%	172041000
R109	MEFM	495k	1/4W	0.02%	160400535
R110	CACP	47k	1/8W	10%	172044700
R111	CACP	10k	1/8W	10%	172041000
R112	CACP	1000	1/8W	10%	172031000
RV1	CERM	50k	1/2V	10%	130645000
RV2 to RV4	CMPM	20k	1/2V	10%	130642000
RV5	CMPM	2k	1/2V	10%	130632000
C1	Variable	2/12p			290060030
C2	MICA	1000p	350V	1%	208500057
C3	MICA	10000p	125V	1%	208500036
C4	MICA	68p	350V	2%	250116800
C5	Variable	6/66p	50V		290030190
C7	ESTF	10000p	400V	10%	222341000
C8	CERM	0.047	25V	-20% +10%	241944700
C9	CERM	0.047	25V	-20% +10%	241944700
C10	CERM	100p	500V	20%	241321000
C11	CERM	470p	500V	20%	241324700
C12	CERM	1000p	500V	20%	241331000
C13	CERM	0.047	25V	-20% +10%	241944700
C14	CERM	0.047	25V	-20% +10%	241944700
C15	CERM	470p	500V	20%	241324700
C16	CERM	100p	500V	20%	241321000
C17	CERM	1000p	500V	20%	241331000
C18	CERM	2.2k	500V	20%	241332200
C19	Variable	2/22p	50V		290030180
C20	Variable	1.4/5.5p	50V		290030220
C21	ESTF	220p	125V	10%	210222200
C22	ESTF	220p	125V	10%	210222200
C23 to C25	TAND	47	20V	20%	265874700
C26	Variable	2/22p	50V		290030180
C27	ESTF	220p	125V	10%	210222200
C31	CERM	0.047	25V	-20% +10%	241944700

PARTS LIST, 1170 PCB No. 24

Cct Ref.	General Description				Solartron Part No.
C32	CERM	0.047	25V	-20% +10%	241944700
C33	CERM	4.7p	500V	20%	241304700
C34	CERM	150p	500V	20%	241321500
C35	ESTF	470p	400V	10%	222324700
C37	CERM	0.047	25V	-20% +10%	241944700
C38	CERM	150p	500V	20%	241321500
C39	ESTF	2200p	160V	10%	221332200
C40	CERM	33p	500V	20%	241313300
C41	CERM	0.047	25V	-20% +10%	241944700
C42	CERM	0.047	25V	-20% +10%	241944700
C43	CERM	0.01	25V	-25% +50%	241941000
C44	CERM	0.047	25V	-20% + 10%	241944700
C45	CERM	0.047	25V	-20% +10%	241944700
C46	CERM	33p	500V	20%	241313300
C47	CERM	100p	500V	20%	241321000
C48	CERM	220p	500V	20%	241322200
C49	CERM	220p	500V	20%	241322200
C50 to C53	CERM	0.047	25V	-20% +10%	241944700
C57	CERM	330p	500V	20%	241323300
D1 to D16	SD3				300522160
D17 to D20	IN3062				300524320
D21	SZD. 6.2				300521240
D22	SZD 5.1				300521310
D23 to D26	SD3				300522160
D29	SZD 3.0				300523880
TR1	2N5517				300555430
TR2 to TR9	U1897E				300553800
TR10	2N3962/BFX37				300553030
TR11	MM1614				300551670
TR12	2N2369				300552390
TR13	2N2369				300552390
TR14	BCY70				300553590
TR15	BC107A				300553320
TR16	BCY70				300553590
IC1	715c DIL				510090140
IC2	715c DIL				510090140
IC3	301A				510000620
IC4	301A				510000620
IC5	CA3045/CA3046				300554090
IC6	7400				510000340
IC7	7476				510000500
IC8	7400				510000340
IC9	74L04				510001040
IC10	74L00				510001030
IC11	7406				510000760
IC12 to IC14	Optical coupler				300540140
IC15	7406				510000760
L1	Inductor 680		280mA	10%	305020390
L2	Inductor 680		280mA	10%	305020390
RLA	Relay, reed				300651780
T1	Transformer pulse				309605502
T2	Transformer pulse				309605502
T3	Transformer pulse				309605602
T4	Transformer pulse				309605602

EDGE CONNECTORS – 1170, PCB No. 24

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	236	INPUT LO	
2AB	238	INPUT HI	
3AB	236	INPUT LO	
4AB	418	REJECT BIAS VOLTS	
6AB	82	CORRELATOR 10V REF	
7AB	83	CORRELATOR 10.6V REF	
9AB	575	X 1.57	
10AB	574	X 1.11	
11AB	573	X 1	
12AB	84	CORRELATOR –15V	
13AB	85	CORRELATOR –10V	
14AB	86	CORRELATOR 0V	
15AB	87	CORRELATOR +15V	
21AB	632	0V	
22AB	632	+5V	
26AB	66	CHOP	
27AB	611	2MHz	
28AB	241	INPUT RANGE 1	
29AB	242	INPUT RANGE 2	
30AB	243	INPUT RANGE 4	
31AB	555	V TO F	
32AB	260	$\overline{\text{INPUT OVERLOAD}}$	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

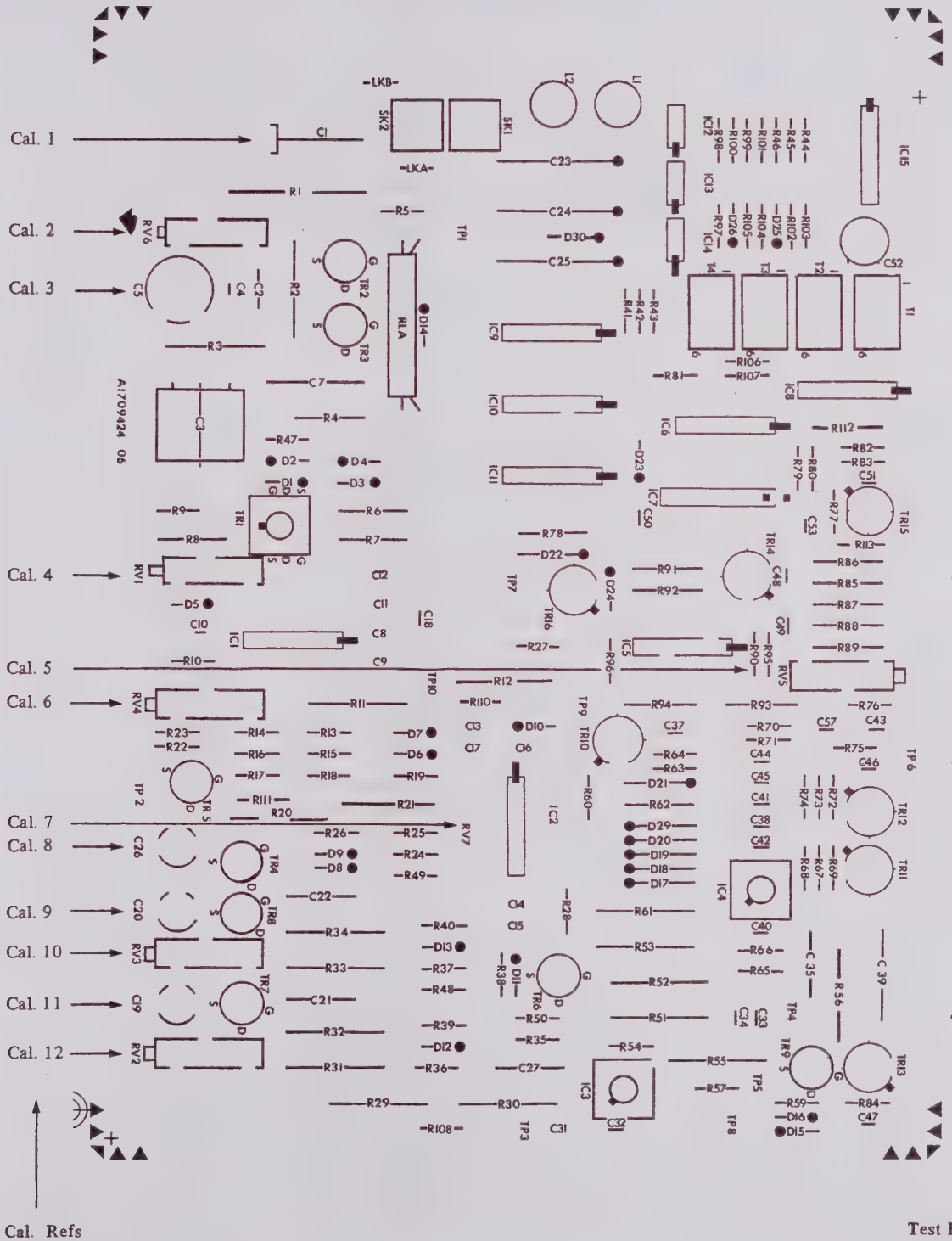
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1170 PCB No. 24 INPUT AMP.

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	C1	20/CAA	14.0.3 17.3.10	Input attenuator setting.
2	RV6	20/CAA		Input attenuator setting.
3	C5	20/CAA	17.3.10	Input attenuator setting.
4	RV1	20/CAA	14.0.2 17.3.3	Set zero on IC1.
5	RV5	21/CAE	14.0.7 17.3.11 17.5.5	Sets overload annunicator circuit.
6	RV4	20/CAB	14.0.3 17.3.4 17.3.6	Sets gain of IC2.
7	RV7	20/CAB		Sets zero offset of IC2
8	C26	20/CAB	14.0.4 17.3.7	Part of gain setting of IC2.
9	C20	20/CAB	14.0.4 17.3.9	Part of gain setting of IC2.
10	RV3	20/CAB	14.0.3 17.3.8/9	Part of gain setting of IC2.
11	C19	20/CAB	14.0.4 17.4.3	Part of gain setting of IC2.
12	RV2	20/CAB	14.0.3	Part of gain setting of IC2.

COMPONENT LAYOUT, 1170 PCB No. 24



Calibration information is given in Section 3.

PARTS LIST, A170 MOTHERBOARD

Cct Ref	General Description	Solartron Part No.
S1	Switch rotary miniature	370100980
SKK	Connector, 16 way	352516310
	Connector, 24 way	352524250
	Connector, 32 way	352532290
	Connector, 56 way	352556010

DISCONNECT PINS – 1170, PCB No. 25

Disc No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1	321	$\overline{\text{MAINS SET}}$	
2	320	MAINS SET	
3	250	$\overline{\text{INT GEN CLOCK}}$	
4	249	INT/$\overline{\text{EXT}}$	
5	147	$\overline{\text{EXT GEN CLOCK}}$	
6	614	10MHz EXP 2	
7	613	10MHz EXP 1	
8	598	10Hz	
9	503	START RAMP	
10	489	SYNTHESISER OUTPUT	
11	606	100kHz	
12	601	10kHz	
13	600	1kHz	
14	617	10MHz HI	
15	615	10MHz GROUND	
16	620	10.2 - 12MHz HI	
17	619	10.2 - 12MHz GROUND	
18	211	HOLD RAMP	
19	612	$\overline{\geqslant 10\text{MHz}}$	
20	452	SAMPLE RAMP	
21	359	OUTPUT VOLTS EXPONENT 1	
22	360	OUTPUT VOLTS EXPONENT 2	
23	358	OUTPUT VOLTS EXP STROBE	
24	542	T9 (DIGIT CONTROL)	
25	26	$\overline{\text{ADD BIAS POLARITY}}$	
26	13	$\overline{\text{ADD BIAS POLARITY STROBE}}$	
27	342	MOS STORE DATA OUTPUT 8	
28	341	MOS STORE DATA OUTPUT 4	
29	340	MOS STORE DATA OUTPUT 2	
30	339	MOS STORE DATA OUTPUT 1	
31	67	CORRELATOR CLOCK	
32	149	$\overline{\text{EXT SYNC}}$	
33	185	GENERATOR CLOCK	
34	463	$\overline{\text{SET 0}^{\circ}}$	
35	388	$\overline{\text{PRE 0}^{\circ}}$	
36	605	$\overline{\text{10MHz RANGE}}$	
37	599	100Hz	
38	387	PRE 0°	
39	611	2MHz	
40	68	$\overline{\text{CHANGE FREQ}}$	
41	139	$\overline{\text{ENTER PULSE}}$	
42	139	$\overline{\text{ENTER PULSE}}$	
43	358	OUTPUT VOLTS EXP STROBE	
44	295	$\overline{\text{LH DISPLAY STROBE}}$	
45	420	$\overline{\text{RH DISPLAY STROBE}}$	
46	13	$\overline{\text{ADD BIAS POLARITY STROBE}}$	
47	346	MOS STORE DATA INPUT 8	
48	344	MOS STORE DATA INPUT 2	
49	16	$\overline{\text{ADD BIAS}}$	
50	474	SINE	
51	497	SQUARE	
52	608	500kHz	
53	598	10Hz	

Disc No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
54	164	F.P. SERIAL O/P	
55	546	T10 DELAYED	
56	545	T9 DELAYED	
57	422	$\overline{\text{REMOTE}}$	
58	268	KEYBOARD DISPLAY DATA 8	
59	267	KEYBOARD DISPLAY DATA 4	
60	266	KEYBOARD DISPLAY DATA 2	
61	337	MOD	
62	172	FREQ. RANGE 2	
63	171	FREQ. RANGE 1	
64	265	KEYBOARD DISPLAY DATA 1	
65	618	$\overline{\text{10MHz UNIT}}$	
66	327	$\overline{\text{MOS STORE WRITE}}$	
67	345	MOS STORE DATA INPUT 4	
68	343	MOS STORE DATA INPUT 1	
69	330	$\overline{\text{mHz NEON}}$	
70	553	$\overline{\text{VOLTS NEON}}$	
71	328	$\overline{\text{MHz NEON}}$	
72	289	$\overline{\text{kHz NEON}}$	
73	213	$\overline{\text{Hz NEON}}$	
74	272	KEYBOARD DISPLAY EXP 8	
75	271	KEYBOARD DISPLAY EXP 4	
76	270	KEYBOARD DISPLAY EXP 2	
77	269	KEYBOARD DISPLAY EXP 1	
78	301	LH DISPLAY EXP 8	
79	300	LH DISPLAY EXP 4	
80	451	SAMPLE OUTPUT VOLTS	
81	299	LH DISPLAY EXP 2	
82	298	LH DISPLAY EXP 1	
83	632	–11V	
84	174	$\overline{\text{FRONT PANEL SYNC}}$	
85	541	$\overline{\text{TRIG MAINS SET}}$	
86	450	SAMPLE ADD BIAS	
87	186	GENERATOR D/A MARK-SPACE	
88	187	$\overline{\text{GENERATOR D/A MARK-SPACE}}$	
89	612	$\overline{\geqslant 10\text{MHz}}$	
90	632	+18V	
91	598	10Hz	
92	490	$\overline{\text{STORE SYNC}}$	
93	91	D/A RESET	
94	438	$\overline{\text{RUN}}$	
95	292	LATCH STORE DATA OUTPUT $\overline{4}$	
96	290	LATCH STORE DATA OUTPUT $\overline{1}$	
97	249	INT/$\overline{\text{EXT}}$	
98	67	CORRELATOR CLOCK	
99	149	$\overline{\text{EXT SYNC}}$	
100	632	–16V	
101	293	LATCH STORE DATA OUTPUT $\overline{8}$	
102	291	LATCH STORE DATA OUTPUT $\overline{2}$	

Disc No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
103	147	EXT GEN CLOCK	
104	250	INT GEN CLOCK	
105	387	PRE 0^{o}	
106	594	1184 –15V	
107	595	1184 0V	
108	596	1184 +15V	
109	188	GENERATOR CARRIER M/S	
110	189	GENERATOR CARRIER M/S	
111	599	100Hz	
112	84	CORRELATOR –15V	
113	85	CORRELATOR –10V	
114	86	CORRELATOR 0V	
115	87	CORRELATOR +15V	
116	236	INPUT LO	
117	128	DISPLAY CARTES	
118	122	DISABLE DISPLAY	
119	412	RADIANS	
120	476	STOP	
121	251	INVALID	
122	160	FLAG	
123	422	REMOTE	
124	663		UNCLASSIFIED
125	664		UNCLASSIFIED
126	665		UNCLASSIFIED
127	296	LH DISPLAY EXPT STROBE	
128	421	RH DISPLAY POLARITY STROBE	
129	297	LH DISPLAY POLARITY STROBE	
130	543	T10 (DIGIT CONTROL)	
131	660		UNCLASSIFIED
132	657		UNCLASSIFIED
133			PIN REMOVED
134	653		UNCLASSIFIED
135			
TO	632	+5V A	to Decouple PCB 35 CIRCUIT 46
137			
138			
TO	632	+5V B	to Decouple PCB 35 CIRCUIT 46
140			
141			
TO	632	+5V C	to Decouple PCB 35 CIRCUIT 46
143			
144			
TO	632	+5V D	to Decouple PCB 35 CIRCUIT 46
146			
147			
TO	632	0V and E TAG	PL J STAR TAG
157			
158	160	FLAG	

Disc No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
159	143	ENTER FREQ	
160	166	FREQ (KEYBOARD)	
161	486	SET SWEEP OFF	
162	235	INHIBIT FREQ. KB	
163	488	SYNCH FLAG	
164	170	FREQ. STROBE	
165	476	STOP	
166	163	FORCE MOD	
167	593	1184 FITTED	
168	251	INVALID	
169	235	INHIBIT FREQ. KB	
170	162	FORCE HET	
171	652		UNCLASSIFIED
172	654		UNCLASSIFIED
173	655		UNCLASSIFIED
174	658		UNCLASSIFIED
175	659		UNCLASSIFIED
176	166	FREQ (KEYBOARD)	
177	661		UNCLASSIFIED
178	662		UNCLASSIFIED
179	210	HET ON	
180	666		UNCLASSIFIED
181	667		UNCLASSIFIED
182	668		UNCLASSIFIED
183	669		UNCLASSIFIED
184	670		UNCLASSIFIED
185	671		UNCLASSIFIED
186	420	RH DISPLAY STROBE	
187	678		UNCLASSIFIED
188	297	LH DISPLAY POLARITY STROBE	
189	421	RH DISPLAY POLARITY STROBE	
190	672		UNCLASSIFIED
191	679		UNCLASSIFIED
192	673		UNCLASSIFIED
193	674		UNCLASSIFIED
194	675	0V and E TAG	
195	170	FREQ. STROBE	
196	68	CHANGE FREQ.	
197	676		UNCLASSIFIED
198	677	HET ON	
199	542	T9 (DIGIT CONTROL)	
200	296	LH DISPLAY EXPT STROBE	
201	543	T10 (DIGIT CONTROL)	
202	680		UNCLASSIFIED
203	681		UNCLASSIFIED
204	682		UNCLASSIFIED
205	683		UNCLASSIFIED
206	684		UNCLASSIFIED
207	685		UNCLASSIFIED
208	163	FORCE MOD	
209	593	1184 FITTED	
210	162	FORCE HET	
211	651		UNCLASSIFIED

Disc No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
212	486	$\overline{\text{SET SWEEP OFF}}$	
213	295	$\overline{\text{LH DISPLAY STROBE}}$	
214	210	$\overline{\text{HET ON}}$	
215	475	SPARE FLAG	
216	348	MEASURE Y	
217	656		UNCLASSIFIED

PIN ALLOCATION PL/SK J

Pin No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
A1	629	+18V	
A2	597	+5V	
A3	632	0V AND E TAG	
A4	628	−16V	
A5	619	10.2 −12MHz GROUND	
A6	620	10.2 −12MHz HI	
A7	452	SAMPLE RAMP	
A8	211	HOLD RAMP	
A9	185	GENERATOR CLOCK	
A10	489	SYNTHESISER OUTPUT	
A11	462	SYNTHESISER OUTPUT GROUND	
A12	606	100kHz	
A13	601	10kHz	
A14	600	1kHz	
A15	503	START RAMP	
A16	615	10MHz GROUND	
A17	617	10MHz HI	
B1	91	D/A RESET	
B2	450	SAMPLE ADD BIAS	
B3	451	SAMPLE OUTPUT VOLTS	
B4	463	$\overline{\text{SET 0}^{\circ}}$	
B5	187	$\overline{\text{GENERATOR D/A MARK-SPACE}}$	
B6	186	GENERATOR D/A MARK-SPACE	
B7	388	$\overline{\text{PRE 0}^{\circ}}$	
B8	26	$\overline{\text{ADD BIAS POLARITY}}$	
B9	359	OUTPUT VOLTS EXPONENT 1	
B10	360	OUTPUT VOLTS EXPONENT 2	
B11	605	$\overline{\text{10kHz RANGE}}$	
B12	16	ADD BIAS	
B13	337	MOD	
B14	497	SQUARE	
B15	474	SINE	
B16	188	$\overline{\text{GENERATOR CARRIER M/S}}$	
B17	189	GENERATOR CARRIER M/S	
C1			
C2			
C3			
C4	618	$\overline{\text{10MHz UNIT}}$	
C5	632	−11V	
C6			
C7	343	MOS STORE DATA INPUT 1	
C8	344	MOS STORE DATA INPUT 2	
C9	345	MOS STORE DATA INPUT 4	
C10	346	MOS STORE DATA INPUT 8	
C11	327	$\overline{\text{MOS STORE WRITE}}$	
C12	613	10MHz EXP 1	
C13	614	10MHz EXP 2	
C14	68	$\overline{\text{CHANGE FREQ.}}$	
C15	546	T10 DELAYED	
C16	488	$\overline{\text{SYNCH FLAG}}$	
C17			

PIN ALLOCATION PL/SK J (cont)

Pin No.	INTERCONNECTION LIST DETAILS		REMARKS
	No.	SIGNAL TITLE	
D1	632	+18V	
D2	597	+5V	
D3	632	0V	
D4	164	F.P. SERIAL O/P	
D5	174	$\overline{\text{FRONT PANEL SYNC}}$	
D6	608	500kHz	
D7	290	LATCH STORE DATA OUTPUT $\overline{1}$	
D8	291	LATCH STORE DATA OUTPUT $\overline{2}$	
D9	292	LATCH STORE DATA OUTPUT $\overline{4}$	
D10	293	LATCH STORE DATA OUTPUT $\overline{8}$	
D11	611	2MHz	
D12	16	ADD BIAS	
D13	337	MOD	
D14	497	SQUARE	
D15	474	SINE	
D16	438	$\overline{\text{RUN}}$	
D17	321	$\overline{\text{MAINS SET}}$	

PIN ALLOCATION PL/SK K

Pin No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1	236	INPUT LO	
2	238	INPUT HI	
3	236	INPUT LO	
11	632	+5V(D)	
12	632	0V	
13	632	+18V	
14	571	X/$\overline{Y}$ OUTPUT (A)	
15	570	X/$\overline{Y}$ FLAG	
16	599	100Hz	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	321	$\overline{\text{MAINS SET}}$	
2AB	120	DECADE 4	
3AB	119	DECADE 2	
4AB	118	DECADE 1	
5AB	52	$\overline{\text{BUSY}}$	
6AB	64	$\overline{\text{CLEAR}}$	
7B	123	DECSH CMD	
8A	97	DELAY/$\overline{\text{INT}}$	
8B	244	INT	
9A	478	STROBE B	
9B	477	STROBE A	
11AB	137	ENABLE C	
14AB	386	POS B	
15AB	385	POS A	
16AB	12	ADD B CMD	
17AB	11	ADD A CMD	
19AB	234	$\overline{\text{INH. SGN. CH}}$	
20A	334	MPX ADDRESS 4B	
20B	333	MPX ADDRESS 4A	
21AB	332	MPX ADDRESS 2	
22A	493	STOP CODE B	
22B	335	MPX 1 CMD	
23AB	494	STOP CODE A	
24A	302	LOAD	
24B	590	1/1000	
25AB	611	2MHz	
33AB	148	ENABLE DECODE	
34AB	646		UNCLASSIFIED
35AB	647		UNCLASSIFIED
36AB	648		UNCLASSIFIED
38AB	20	ARITH COND 2	
39AB	30	BTEN	
40AB	1	ATEN	
41AB	255	ITERATE	
43AB	402	ROM OUTPUT 1	
44AB	403	ROM OUTPUT 2	
45AB	404	ROM OUTPUT 4	
46AB	405	ROM OUTPUT 8	
48AB	407	ROM OUTPUT 32	
49AB	408	ROM OUTPUT 64	
50AB	551	$\overline{\text{UP}}$/DOWN	
51AB	303	LOAD C	
52AB	323	$\overline{\text{MEASURE BIAS}}$	
53AB	307	LOCAL DATA BUS $\overline{8}$	
54AB	306	LOCAL DATA BUS $\overline{4}$	
55AB	305	LOCAL DATA BUS $\overline{2}$	
56AB	304	LOCAL DATA BUS $\overline{1}$	

INTERCONNECTION LIST DETAILS

E.C. No.	No.	SIGNAL TITLE	REMARKS
1A	321	$\overline{\text{MAINS SET}}$	
1B	235	$\overline{\text{INHIBIT FREQ. KB}}$	
2A	412	$\overline{\text{RADIANS}}$	
2B	162	$\overline{\text{FORCE HET}}$	
3A	488	$\overline{\text{SYNCH FLAG}}$	
3B	650		UNCLASSIFIED
4A	612	$\overline{\geqslant 10\text{MHz}}$	
4B	651		UNCLASSIFIED
5A	249	INT/$\overline{\text{EXT}}$	
5B	652		UNCLASSIFIED
6A	147	$\overline{\text{EXT GEN CLOCK}}$	
6B	653		UNCLASSIFIED
7A	67	CORRELATOR CLOCK	
7B	654		UNCLASSIFIED
8A	250	$\overline{\text{INT GEN CLOCK}}$	
8B	655		UNCLASSIFIED
9A	486	$\overline{\text{SET SWEEP OFF}}$	
9B	149	$\overline{\text{EXT SYNC}}$	
10AB	632	−11V	
11AB	632	−16V	
12AB	632	+18V	
13A	656		UNCLASSIFIED
13B	476	$\overline{\text{STOP}}$	
14AB	657		UNCLASSIFIED
15AB	598	10Hz	
16AB	387	PRE 0°	
17AB	69	$\overline{\text{COMPUTE}}$	
18AB	541	$\overline{\text{TRIG MAINS SET}}$	
19AB	127	DISPLAY LOG	
20AB	128	DISPLAY CARTES	
21AB	608	500kHz	
22AB	490	$\overline{\text{STORE SYNC}}$	
23AB	91	D/A RESET	
24AB	96	D/A MARK-SPACE	
25A	611	2MHz	
25B	658		UNCLASSIFIED
26A	438	$\overline{\text{RUN}}$	
26B	169	$\overline{\text{FREQ. EXP. STROBE}}$	
32A	165	F.P. SERIAL O/P	
32B	659		UNCLASSIFIED
33AB	660		UNCLASSIFIED
34AB	161	$\overline{\text{FORCED REMOTE}}$	
35AB	294	$\overline{\text{LATCH STORE WRITE}}$	
36AB	102	D — A SAMPLE LH DISPLAY	
37AB	103	D — A SAMPLE RH DISPLAY	
38AB	101	D — A SAMPLE LOG F	
39AB	293	LATCH STORE DATA OUTPUT $\overline{8}$	
40AB	292	LATCH STORE DATA OUTPUT $\overline{4}$	
41AB	291	LATCH STORE DATA OUTPUT $\overline{2}$	
42AB	290	LATCH STORE DATA OUTPUT $\overline{1}$	
43A	317	LATCH STORE DATA INPUT 8	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
43B	166	$\overline{\text{FREQ.}}$ (KEYBOARD)	
44A	316	LATCH STORE DATA INPUT 4	
44B	251	$\overline{\text{INVALID}}$	
45AB	315	LATCH STORE DATA INPUT 2	
46AB	314	LATCH STORE DATA INPUT 1	
47A	327	$\overline{\text{MOS STORE WRITE}}$	
47B	160	FLAG	
48A	346	MOS STORE DATA INPUT 8	
48B	661		UNCLASSIFIED
49A	345	MOS STORE DATA INPUT 4	
49B	662		UNCLASSIFIED
50A	344	MOS STORE DATA INPUT 2	
50B	210	$\overline{\text{HET ON}}$	
51AB	343	MOS STORE DATA INPUT 1	
52AB	422	$\overline{\text{REMOTE}}$	
53AB	342	MOS STORE DATA OUTPUT 8	
54AB	341	MOS STORE DATA OUTPUT 4	
55AB	340	MOS STORE DATA OUTPUT 2	
56AB	339	MOS STORE DATA OUTPUT 1	

EDGE CONNECTORS – 1170, PCB No. 19

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1A	235	$\overline{\text{INHIBIT FREQ. KB}}$	
1B	321	$\overline{\text{MAINS SET}}$	
2A	162	$\overline{\text{FORCE HET}}$	
2B	412	$\overline{\text{RADIANS}}$	
3A	650		UNCLASSIFIED
3B	663		UNCLASSIFIED
4A	651		UNCLASSIFIED
4B	612	$\overline{\geqslant 10\text{MHz}}$	
5A	652		UNCLASSIFIED
5B	249	INT/$\overline{\text{EXT}}$	
6A	147	$\overline{\text{EXT GEN CLOCK}}$	
6B	653		UNCLASSIFIED
7A	654		UNCLASSIFIED
7B	67	CORRELATOR CLOCK	
8A	655		UNCLASSIFIED
8B	250	$\overline{\text{INT GEN CLOCK}}$	
9A	486	$\overline{\text{SET SWEEP OFF}}$	
9B	149	$\overline{\text{EXT SYNC}}$	
10AB	632	−11V	
11AB	632	−16V	
12AB	632	+18V	
13A	656		UNCLASSIFIED
13B	476	$\overline{\text{STOP}}$	
14AB	657		UNCLASSIFIED
15AB	398	10Hz	
16AB	387	PRE 0°	
17AB	69	$\overline{\text{COMPUTE}}$	
18AB	541	$\overline{\text{TRIG MAINS SET}}$	
19AB	127	DISPLAY LOG	
20A	128	DISPLAY CARTES	
20B	664		UNCLASSIFIED
21AB	608	500kHz	
22AB	490	$\overline{\text{STORE SYNC}}$	
23A	91	D/A RESET	
23B	665		UNCLASSIFIED
24AB	96	D/A MARK-SPACE	
25A	658		UNCLASSIFIED
25B	611	2MHz	
26A	438	$\overline{\text{RUN}}$	
26B	169	$\overline{\text{FREQ. EXP. STROBE}}$	
32A	659		UNCLASSIFIED
32B	165	F.P. SERIAL O/P	
33AB	660		UNCLASSIFIED
34AB	161	$\overline{\text{FORCED REMOTE}}$	
35AB	294	$\overline{\text{LATCH STORE WRITE}}$	
36AB	102	D — A SAMPLE LH DISPLAY	
37AB	103	D — A SAMPLE RH DISPLAY	
38A	68	$\overline{\text{CHANGE FREQ}}$	
38B	101	D — A SAMPLE LOG F	
39AB	293	LATCH STORE DATA OUTPUT $\overline{8}$	
40AB	292	LATCH STORE DATA OUTPUT $\overline{4}$	
41AB	291	LATCH STORE DATA OUTPUT $\overline{2}$	
42AB	290	LATCH STORE DATA OUTPUT $\overline{1}$	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
43A	166	$\overline{\text{FREQ.}}$ (KEYBOARD)	
43B	317	LATCH STORE DATA INPUT 8	
44A	316	LATCH STORE DATA INPUT 4	
44B	251	$\overline{\text{INVALID}}$	
45AB	315	LATCH STORE DATA INPUT 2	
46AB	314	LATCH STORE DATA INPUT 1	
47A	327	$\overline{\text{MOS STORE WRITE}}$	
47B	160	FLAG	
48A	661		UNCLASSIFIED
48B	346	MOS STORE DATA INPUT 8	
49A	662		UNCLASSIFIED
49B	345	MOS STORE DATA INPUT 4	
50A	210	$\overline{\text{HET ON}}$	
50B	344	MOS STORE DATA INPUT 2	
51AB	343	MOS STORE DATA INPUT 1	
52AB	422	$\overline{\text{REMOTE}}$	
53AB	342	MOS STORE DATA OUTPUT 8	
54AB	341	MOS STORE DATA OUTPUT 4	
55AB	340	MOS STORE DATA OUTPUT 2	
56AB	339	MOS STORE DATA OUTPUT 1	

EDGE CONNECTORS – 1170, PCB No. 20

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1A	321	MAINS SET	
1B	666		UNCLASSIFIED
2A	412	RADIANS	
2B	667		UNCLASSIFIED
3A	650		UNCLASSIFIED
3B	663		UNCLASSIFIED
4A	612	⩾10MHz	
4B	668		UNCLASSIFIED
5A	249	INT/EXT	
5B	669		UNCLASSIFIED
6A	147	EXT GEN CLOCK	
6B	653		UNCLASSIFIED
7A	67	CORRELATOR CLOCK	
7B	670		UNCLASSIFIED
8A	250	INT GEN CLOCK	
8B	671		UNCLASSIFIED
9A	486	SET SWEEP OFF	
9B	149	EXT SYNC	
10AB	632	−11V	
11AB	632	−16V	
12AB	632	+18V	
13A	295	LH DISPLAY STROBE	
13B	476	STOP	
14A	657		UNCLASSIFIED
14B	420	RH DISPLAY STROBE	
15AB	598	10Hz	
16AB	387	PRE 0^{o}	
17A	69	COMPUTE	
17B	297	LH DISPLAY POLARITY STROBE	
18A	541	TRIG MAINS SET	
18B	421	RH DISPLAY POLARITY STROBE	
19A	127	DISPLAY LOG	
19B	672		UNCLASSIFIED
20A	128	DISPLAY CARTES	
20B	664		UNCLASSIFIED
21AB	608	500kHz	
22A	490	STORE SYNC	
22B	673		UNCLASSIFIED
23A	91	D/A RESET	
23B	665		UNCLASSIFIED
24A	96	D/A MARK-SPACE	
24B	674		UNCLASSIFIED
25A	611	2MHz	
25B	675	0V and E TAG	
26A	438	RUN	
26B	169	FREQ. EXP. STROBE	
32AB	165	F.P. SERIAL O/P	
33A	660		UNCLASSIFIED
33B	170	FREQ. STROBE	
34AB	161	FORCED REMOTE	
35AB	294	LATCH STORE WRITE	
36AB	102	D – A SAMPLE LH DISPLAY	
37AB	103	D – A SAMPLE RH DISPLAY	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
38A	101	D – A SAMPLE LOG F	
38B	68	$\overline{\text{CHANGE FREQ.}}$	
39A	293	LATCH STORE DATA OUTPUT $\overline{8}$	
39B	676		UNCLASSIFIED
40AB.	292	LATCH STORE DATA OUTPUT $\overline{4}$	
41AB	291	LATCH STORE DATA OUTPUT $\overline{2}$	
42AB	290	LATCH STORE DATA OUTPUT $\overline{1}$	
43A	317	LATCH STORE DATA INPUT 8	
43B	677	$\overline{\text{HET ON}}$	
44A	316	LATCH STORE DATA INPUT 4	
44B	251	$\overline{\text{INVALID}}$	
45AB	315	LATCH STORE DATA INPUT 2	
46AB	314	LATCH STORE DATA INPUT 1	
47A	327	$\overline{\text{MOS STORE WRITE}}$	
47B	160	FLAG	
48A.	346	MOS STORE DATA INPUT 8	
48B	542	T9 (DIGIT CONTROL)	
49A	345	MOS STORE DATA INPUT 4	
49B	296	LH DISPLAY EXPT STROBE	
50A	344	MOS STORE DATA INPUT 2	
50B	543	T10 (DIGIT CONTROL)	
51AB	343	MOS STORE DATA INPUT 1	
52AB	422	$\overline{\text{REMOTE}}$	
53AB	342	MOS STORE DATA OUTPUT 8	
54AB	341	MOS STORE DATA OUTPUT 4	
55AB	340	MOS STORE DATA OUTPUT 2	
56AB	339	MOS STORE DATA OUTPUT 1	

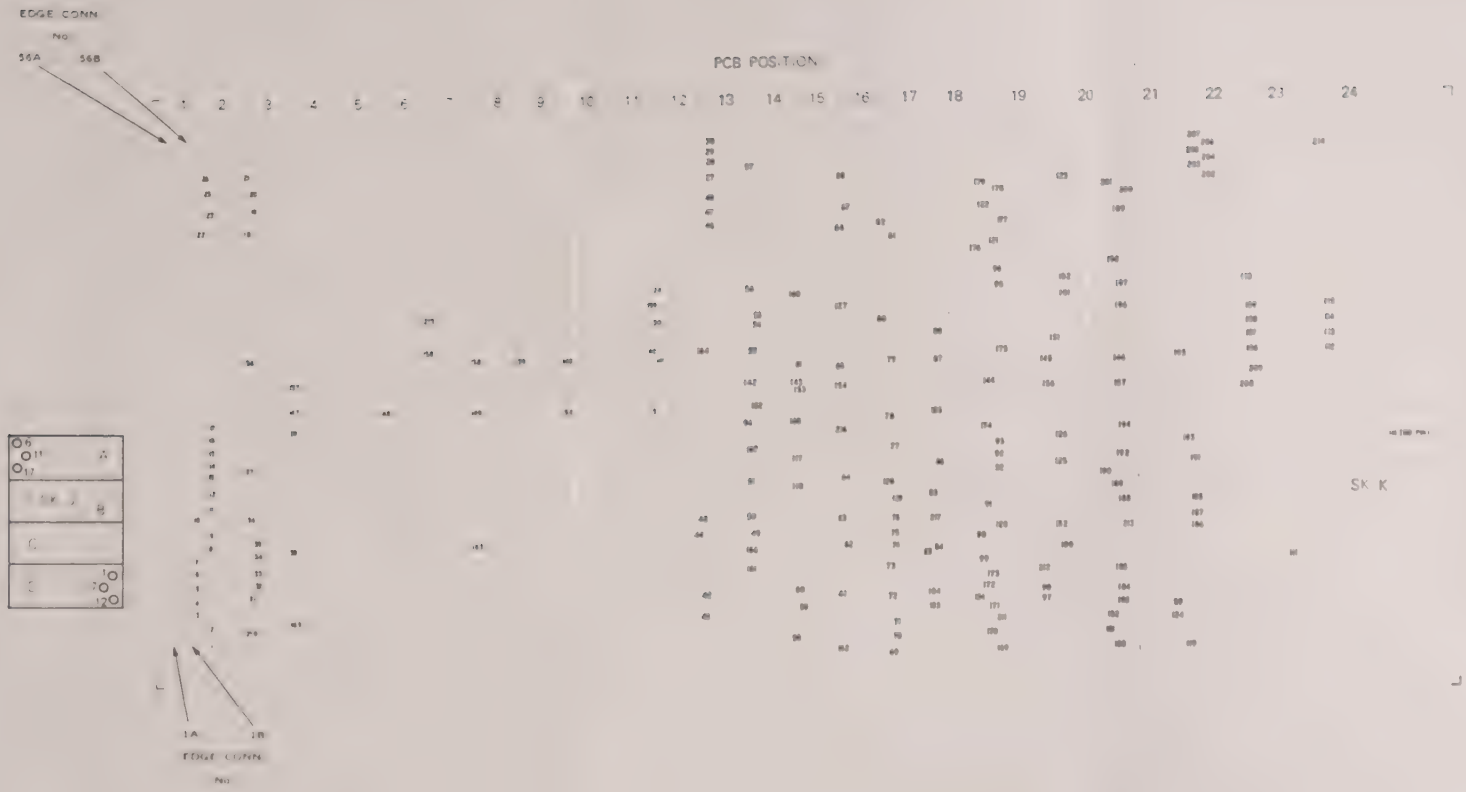
EDGE CONNECTORS – 1170, PCB No. 21

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1A	666		UNCLASSIFIED
1B	321	$\overline{\text{MAINS SET}}$	
2A	667		UNCLASSIFIED
2B	412	$\overline{\text{RADIANS}}$	
3A	650		
3B	663		
4A	668		UNCLASSIFIED
4B	612	$\overline{\geqslant 10\text{MHz}}$	
5A	669		UNCLASSIFIED
5B	249	INT/$\overline{\text{EXT}}$	
6A	147	$\overline{\text{EXT GEN CLOCK}}$	
6B	653		UNCLASSIFIED
7A	670		UNCLASSIFIED
7B	67	CORRELATOR CLOCK	
8A	671		UNCLASSIFIED
8B	250	$\overline{\text{INT GEN CLOCK}}$	
9A	486	$\overline{\text{SET SWEEP OFF}}$	
9B	149	$\overline{\text{EXT SYNC}}$	
10AB	632	−11V	
11AB	632	−16V	
12AB	632	+18V	
13A	295	$\overline{\text{LH DISPLAY STROBE}}$	
13B	476	$\overline{\text{STOP}}$	
14AB	420	$\overline{\text{RH DISPLAY STROBE}}$	
15A	598	10Hz	
15B	678		UNCLASSIFIED
16AB	387	PRE 0°	
17A	297	$\overline{\text{LH DISPLAY POLARITY STROBE}}$	
17B	69	$\overline{\text{COMPUTE}}$	
18A	421	$\overline{\text{RH DISPLAY POLARITY STROBE}}$	
18B	541	$\overline{\text{TRIG MAINS SET}}$	
19A	672		UNCLASSIFIED
19B	127	DISPLAY LOG	
20A	128	DISPLAY CARTES	
20B	664		UNCLASSIFIED
21A	608	500kHz	
21B	679		UNCLASSIFIED
22A	673		UNCLASSIFIED
22B	490	$\overline{\text{STORE SYNC}}$	
23A	91	D/A RESET	
23B	665		UNCLASSIFIED
24AB	674		UNCLASSIFIED
25A	675		UNCLASSIFIED
25B	611	2MHz	
26A	438	$\overline{\text{RUN}}$	
26B	169	$\overline{\text{FREQ. EXP. STROBE}}$	
32AB	165	F.P. SERIAL O/P	
33AB	170	$\overline{\text{FREQ. STROBE}}$	
34AB	161	$\overline{\text{FORCED REMOTE}}$	

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
35AB	294	$\overline{\text{LATCH STORE WRITE}}$	
36AB	102	D – A SAMPLE LH DISPLAY	
37AB	103	D – A SAMPLE RH DISPLAY	
38A	68	$\overline{\text{CHANGE FREQ.}}$	
38B	101	D – A SAMPLE LOG F	
39A	676		UNCLASSIFIED
39B	293	LATCH STORE DATA OUTPUT $\overline{8}$	
40AB	292	LATCH STORE DATA OUTPUT $\overline{4}$	
41AB	291	LATCH STORE DATA OUTPUT $\overline{2}$	
42AB	290	LATCH STORE DATA OUTPUT $\overline{1}$	
43A	677		UNCLASSIFIED
43B	317	LATCH STORE DATA INPUT 8	
44A	316	LATCH STORE DATA INPUT 4	
44B	251	$\overline{\text{INVALID}}$	
45AB	315	LATCH STORE DATA INPUT 2	
46AB	314	LATCH STORE DATA INPUT 1	
47A	327	$\overline{\text{MOS STORE WRITE}}$	
47B	160	FLAG	
48A	542	T9 (DIGIT CONTROL)	
48B	346	MOS STORE DATA INPUT 8	
49A	296	LH DISPLAY EXPT STROBE	
49B	345	MOS STORE DATA INPUT 4	
50A	543	T10 (DIGIT CONTROL)	
50B	344	MOS STORE DATA INPUT 2	
51A	343	MOS STORE DATA INPUT 1	
51B	680		UNCLASSIFIED
52A	422	$\overline{\text{REMOTE}}$	
52B	681		UNCLASSIFIED
53A	342	MOS STORE DATA OUTPUT 8	
53B	682		UNCLASSIFIED
54A	341	MOS STORE DATA OUTPUT 4	
54B	683		UNCLASSIFIED
55A	340	MOS STORE DATA OUTPUT 2	
55B	684		UNCLASSIFIED
56A	339	MOS STORE DATA OUTPUT 1	
56B	685		UNCLASSIFIED

EDGE CONNECTORS – 1170, PCB No. 22

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	571	X/$\overline{Y}$ OUTPUT (A)	
2AB	237	$\overline{\text{INHIBIT DEMOD}}$	
3AB	632	0V	
4AB	63	CARRIER POLARITY	
5AB	632	+5V (D)	
7AB	163	$\overline{\text{FORCE MOD}}$	
8AB	593	$\overline{\text{1184 FITTED}}$	
11AB	594	1184 – 15V	
12AB	595	1184 0V	
13AB	596	1184 + 15V	
15AB	188	$\overline{\text{GENERATOR CARRIER M/S}}$	
16AB	189	GENERATOR CARRIER M/S	
19AB	125	$\overline{\text{DEMOD}}$	
20AB	456	$\overline{\text{SAMPLE REJ BIAS}}$	
21AB	455	SAMPLE REJ BIAS	
22AB	61	$\overline{\text{CORRELATOR CARRIER MARK-SPACE}}$	
23AB	62	CORRELATOR CARRIER MARK-SPACE	


EDGE CONN
No.
56A
56B
PCB POSITION
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
SK K
1A
1B
EDGE CONN
No.

PARTS LIST, A170 ASSEMBLY

Cct Ref	General Description				Solartron Part No.
R1	POWW	0.1	2.5W	10%	173500100
R2	Thermistor (Mullard 10875)				161000009
R3	CACP	2.2M	1/2W	10%	172362200
R4	CACP	2.2M	1/2W	10%	172362200
R5	CACP	15	1/8W	10%	172011500
C1	ALME	5k + 5k	40V		273800010
C2 to C4	ALME	2.2k	10V		273192201
C5	TAND	47	35V		266074700
C6	TAND	150	6V		265281500
C7	PAPM	.047	630V		208300059
C8	PAPM	.047	630V		208300059
C9	PAPF	.01	160V		221341000
C10	PAPF	.01	160V		221341000
C11	CERM	0.1	30V		242051000
C12	CERM	0.1	30V		242051000
D1 to D3	MR881R				300525060
D4 to D6	BA148				300525070
D8	PM7A2—G (AEI)				300525200
TR1	2N 6338				300555900
TR2	2N 6338				300555900
L1	Inductor				309501205
L2/T2	Inductor/Transformer				309601306
T1	Transformer mains toroidal, Sec: 0—26V, 1.3A				309601210
S1	Switch push-button mains, DPCO, 250V, 2A				377000290
S2	Switch (voltage selector)				375000500
FS1a	Fuse 2A, 250V ac/dc anti-surge				380103100
	Fuse holder, size 0				380202000
	Mains I/P socket				382303130
SKJ	Connector, 88 way				382568010
SKL	Connector, 24 way				382524170
SKM	Connector, 16 way				382516180
SKN	Connector, 24 way				382524160
X1	Fan low noise, 115V ac, 99XUO1 ETRI				380110190
	Mains lead for X1				480140240
X2	Fan low noise, 115V ac				380110160

PARTS LIST, 1170 PCB No. 26

Printed Circuit Board A1709126
(Power Supply)

Cct Ref.	General Description				Solartron Part No.
R1	CACP	150		10%	172021500
R2	MEOX	220	1/2W	5%	193522200
R3	MEOX	220	1/2W	5%	193522200
R4	CACP	100	1/4W	10%	172321000
R5	CACP	3.3k			172033300
R6	CACP	4.7k			172034700
R7	CACP	6.8k			172036800
R8	CACP	1k			172031000
R9	CACP	47			172014700
R10	CACP	470			172024700
R11	MEFM	820		0.5%	192728202
R12	MEOX	47			193514700
R13	CACP	3.3k		10%	172033300
R14	MEFM	3.9k		1%	192733902
R15	CACP	1k		10%	172031000
R16	MEFM	9.1k		½%	192739102
R17	MEFM	3.9k		½%	192733902
R18	MEOX	1.1k		1%	195331100
R19	CACP	4.7k		10%	172034700
R20	CACP	330		10%	172023300
R29	CACP	100			172321000
R30	MEFM	8.2			198608202
R31	CACP	470			172024700
R32	CACP	100			195621000
R33	CACP	470			172024700
R34	MEFM	2.2k		½%	192732202
R35	CACP	8.2	0.5W	1%	172308200
R36	CACP	8.2	0.5W	10%	172308200
R37	CACP	1.5k	0.125W	10%	172031500
R38	CACP	470	0.125W	10%	172024700
R44	CACP	4.7k			172034700
R45	CACP	6.8k			172036800
R46	CACP	100k			172051000
R47	CACP	220			172022200
R48	CACP	4.7k			172034700
R49	CACP	56			172015600
R50	CACP	56			172015600
R51	CACP	10k			172041000
R56	POWW	1	1.5W	5%	173401000
R57	CACP	470			172024700
R58	CACP	680			172026800
R59	CACP	18k			172041800
RV1	CAPS	470			136624700
RV2	CAPS	1			136631000
C8	TAND	22	35V		266072200
C9	TAND	150	6V		265281500
C10	CERM	47k	25V		241944700
C11	CERM	4.7p	500V		241304700
C12	TAND	22	35V		266072200
C13	TAND	22	15V		265672200
C14	ESTM	0.1	100V		225451000
C15	ESTM	0.068	100V		225446800
C16	ESTM	0.047	100V		225444700
C17	ESTM	0.068	100V		225446800
C18	CERM	1500p	500V		241331500
C19	TAND	22	15V		265672200
C20	CERM	47k	25V		241944700
C21	CERM	10p	500V		241311000
C22	CERM	10p	500V		241311000
C23	CERM	0.01	25V		241941000
C24	TAND	22	75V		265672200
C25	TAND	22	35V		266072200
C26	CERM	0.047			241944700
C27	ALME	250			270082500
C28	TAND	100	20V		265881000
C31	TAND	22	35V		266072200
C32	TAND	22	15V		265672200

PARTS LIST, 1170 PCB No. 26

Cct Ref.	General Description		Solartron Part No.
D4	Zenner		300523910
D5	Zenner		300521450
D6	Zenner		300521310
D7	SD3		300522160
D8	Zenner		300521450
D9 to D12	SD3		300522160
D13	Zenner		300521470
D14	BA 148		300525070
D15	BA 148		300525070
D16	Zenner		300521470
D19	BA 148		300525070
D20	BA 148		300525070
D21	SD3		300522160
D22	Zenner		300523910
D23	SD3		300522160
D26	SD3		300522160
D27	SD3		300522160
TR10	BC107		300553320
TR11	BC107		300553320
TR12	BFY50		300553610
TR13	BFY50		300553610
TR15	BCY70		300553590
TR16	TIP31		300554010
TR20	BSU64		300554540
TR21	BSU64		300554540
TR24	BC107		300553320
TR25	BCY70		300553590
TR26	TIP31		300554010
TR27	TIP31		300554010
IC1	709c		510000250
IC2	709c		510000250
IC3	SN7413		510000710
IC4	SN7473		510000570
IC5	DTuL944		510000140
T1	Inverter Trans.	0.7mH	309603706
T2	Inverter Trans.	0.7mH	309603706

PIN ALLOCATION PL/SK L

Pin No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1		5V DRIVE	SEE CIRCUIT 45
2		18V DRIVE	SEE CIRCUIT 43
3		+30V	SEE CIRCUIT 43 AND 45
4	632	+5V	
5	632	+5V	
6	632	+18V	
7	632	+18V	
8		—13V	SEE CIRCUIT 43
9		—11V	SEE CIRCUIT 43
11	606	100kHz	
12	541	$\overline{\text{TRIG MAINS SET}}$	
13	320	MAINS SET	
14	632	0V	
19	632	0V	
15	595	SCREEN FOR 16, 17 AND 18	
16	594	1184 —15V	
17	596	1184 +15V	
18	595	1184 0V	
20	86	SCREEN FOR 21, 22, 23 AND 24	
21	84	CORRELATOR —15V	
22	85	CORRELATOR —10V	
23	87	CORRELATOR +15V	
24	86	CORRELATOR 0V	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

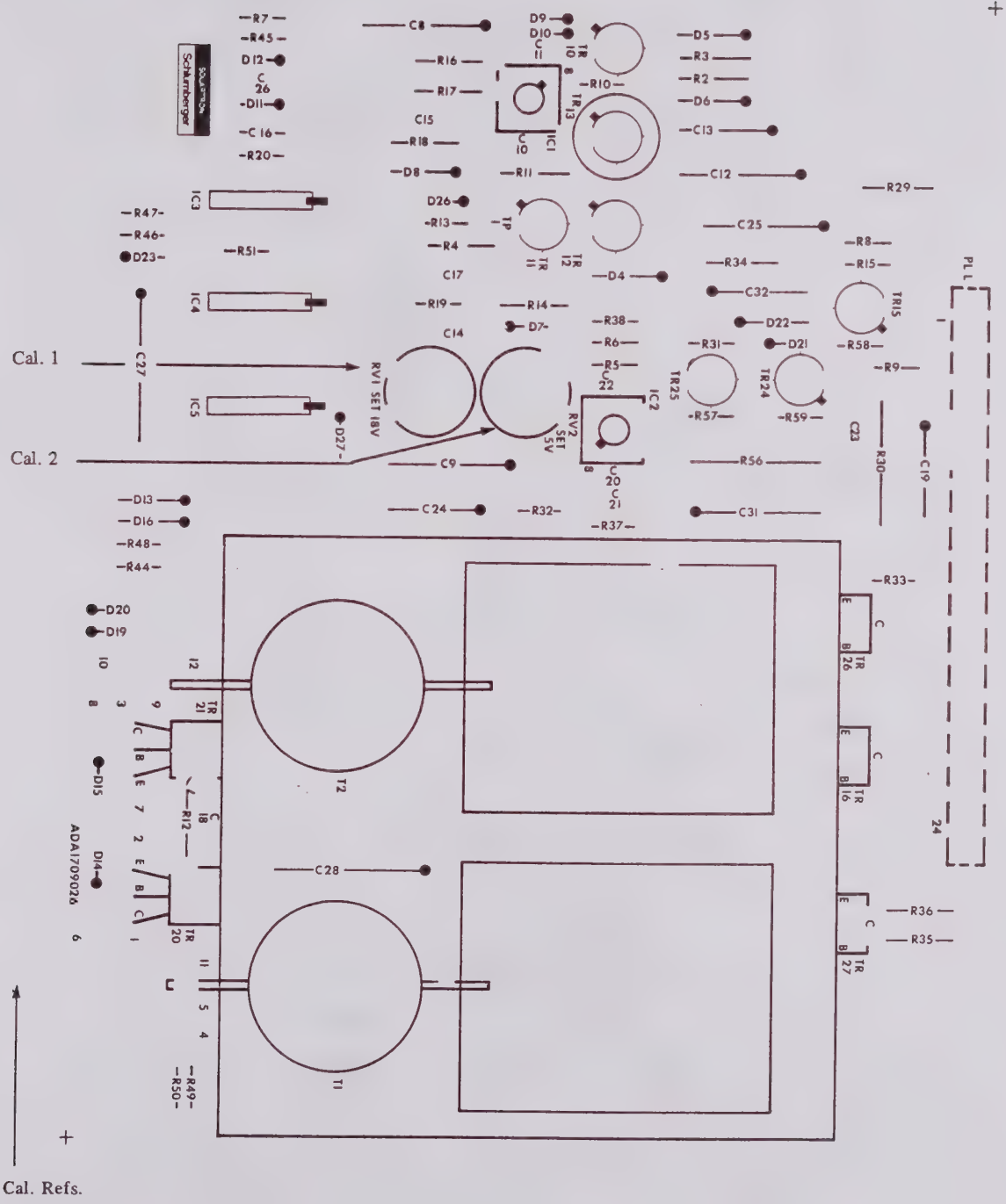
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1170 PCB No. 26 POWER SUPPLY

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	RV1	45/MPS	4.0.4	Sets +18V rail.
2	RV2	45/MPR	4.0.4	Sets +5V rails.

COMPONENT LAYOUT, 1170 PCB No. 26



Calibration information is given in Section 3.

PARTS LIST, 1170 PCB No. 27

Printed Circuit Board A1709127
(Inverter Rectifying Board "A")

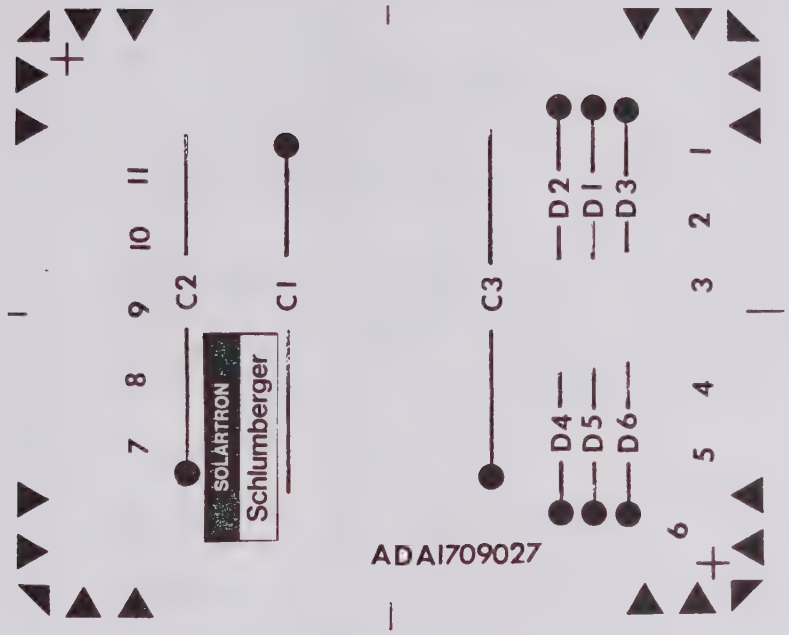
Cct Ref.	General Description			Solartron Part No.
C1	TAND	22	35V	266072200
C2	TAND	22	35V	266072200
C3	TAND	150	6V	265281500
D1 to D6	BA148			300525070

PARTS LIST, 1170 PCB No. 28

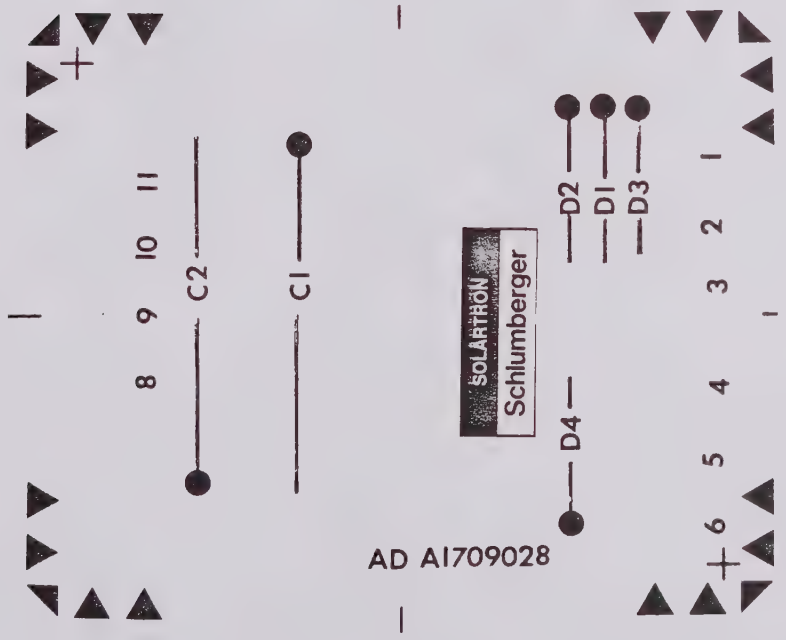
Printed Circuit Board A1709128
(Inverter Rectifying Board "B")

Cct Ref.	General Description			Solartron Part No.
C1	TAND	22	35V	266072200
C2	TAND	22	35V	266072200
D1 to D4	BA 148			300525070

COMPONENT LAYOUT, 1170 PCB No. 27



COMPONENT LAYOUT, 1170 PCB No. 28



PARTS LIST, 1170 PCB No. 29

for

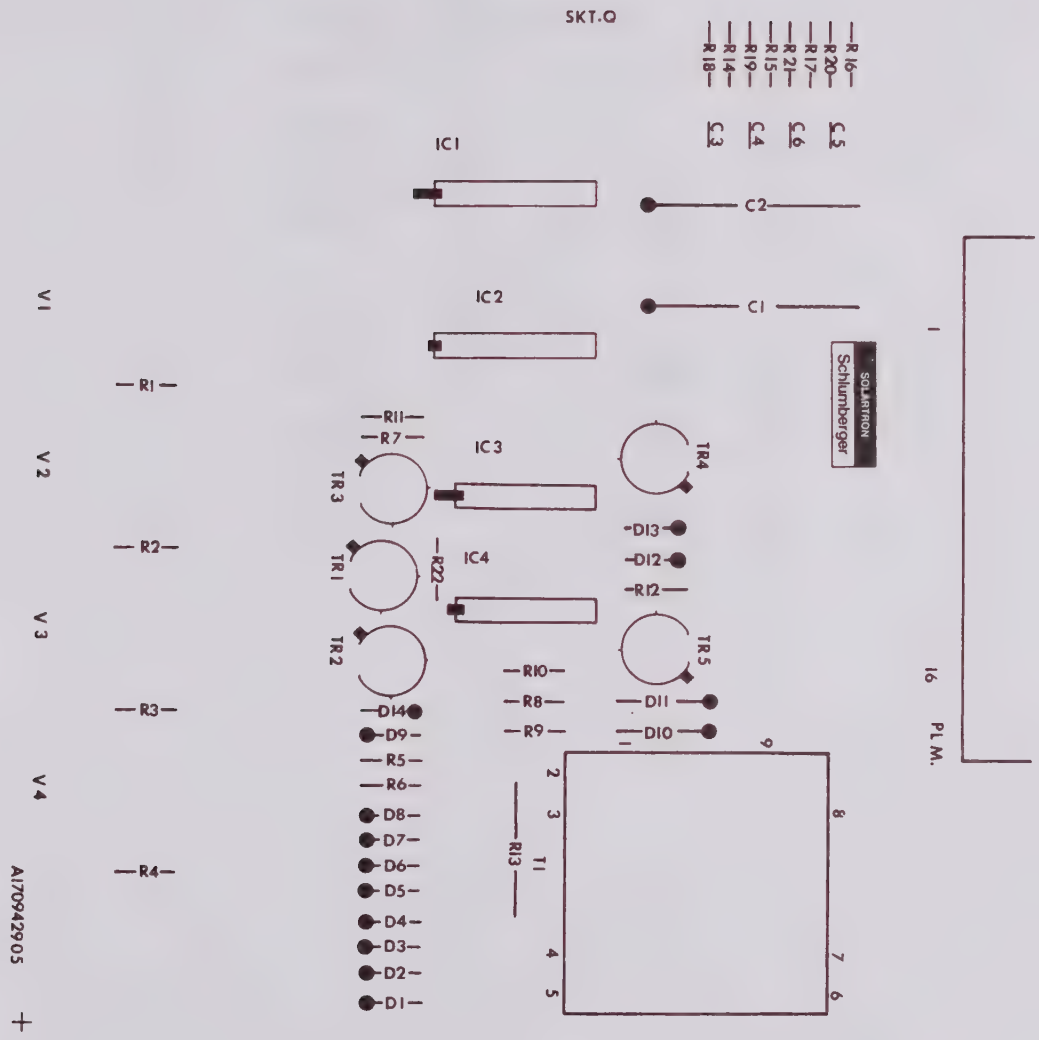
Printed Circuit Board A1709129
(Keyboard Display)

Cct Ref.	General Description				Solartron Part No.
R1 to R5	CACP	2.7k			172032700
R6	CACP	120			172021200
R7	CACP	680			172026800
R8	CACP	2.2k			172032200
R9	CACP	2.2k			172032200
R10	CACP	180			172021800
R11	CACP	2.7k			172032700
R12	CACP	2.7k			172032700
R13	CACP	2.2			172032200
R14 to R17	CACP	100k	1/8W	10%	172051000
R18 to R21	CACP	4.7k	1/8W	10%	172034700
R22	CACP	2.7k	1/8W	10%	172032700
C1	TAND	47	20V		265874700
C2	TAND	47	20V		265874700
C3 to C6	CACP	1000p	750V	20%	241331000
D1 to D9	BA 148				300525070
D10	4.7V				300521470
D11	4.7V				300521470
D12	BA 148				300525070
D13	BA 148				300525070
D14	BA 148				300525070
TR1	MM4001				300554050
TR2	MM4001				300554050
TR3	40327				300552890
TR4	BFY50				300553610
TR5	BFY50				300553610
IC1	SN74141N				510000471
IC2	SN74141N				510000471
IC3	SN7400N				510000340
IC4	DTuL 944				510000140
V1 to V4	GNP17A Numerical Indicator				300011420

PIN ALLOCATION PL/SK M

Pin No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1	267	KEYBOARD DISPLAY DATA 4	
2	266	KEYBOARD DISPLAY DATA 2	
3	268	KEYBOARD DISPLAY DATA 8	
4	265	KEYBOARD DISPLAY DATA 1	
5	632	0V	
6	271	KEYBOARD DISPLAY EXP 4	
7	270	KEYBOARD DISPLAY EXP 2	
8	272	KEYBOARD DISPLAY EXP 8	
9	269	KEYBOARD DISPLAY EXP 1	
10	546	T10 DELAYED	
11	545	T9 DELAYED	
12	251	$\overline{\text{INVALID}}$	
13	476	$\overline{\text{STOP}}$	
14	632	+18V	
15	632	+5V	

COMPONENT LAYOUT, 1170 PCB No. 29



Printed Circuit Board A1709130
(Display Board)

Cct Ref.	General Description		Solartron Part No.
R1 to R8	CACP	2.7k	172032700
R9 to R17	CACP	680	172026800
R18	CACP	1.2k	172031200
C1	CERM	0.047	241944700
C2	CERM	0.047	241944700
C3	TAND	33	265473300
TR1 to TR8	40327		300552890
IC1	SN74141N		510000471
IC2	SN7475N		510000350
IC3	SN7475N		510000350
IC4	SN74141N		510000471
IC5	SN7404N		510000410
IC6	SN7400N		510000340
IC7	SN7401N		510000400
IC8	SN74141N		510000471
IC9	SN74141N		510000471
IC10	SN7475N		510000350
IC11	SN7475N		510000350
IC12	SN7404N		510000410
V1 to V8	Numerical Indicator GNP17A		300011420

PIN ALLOCATION PL/SK N

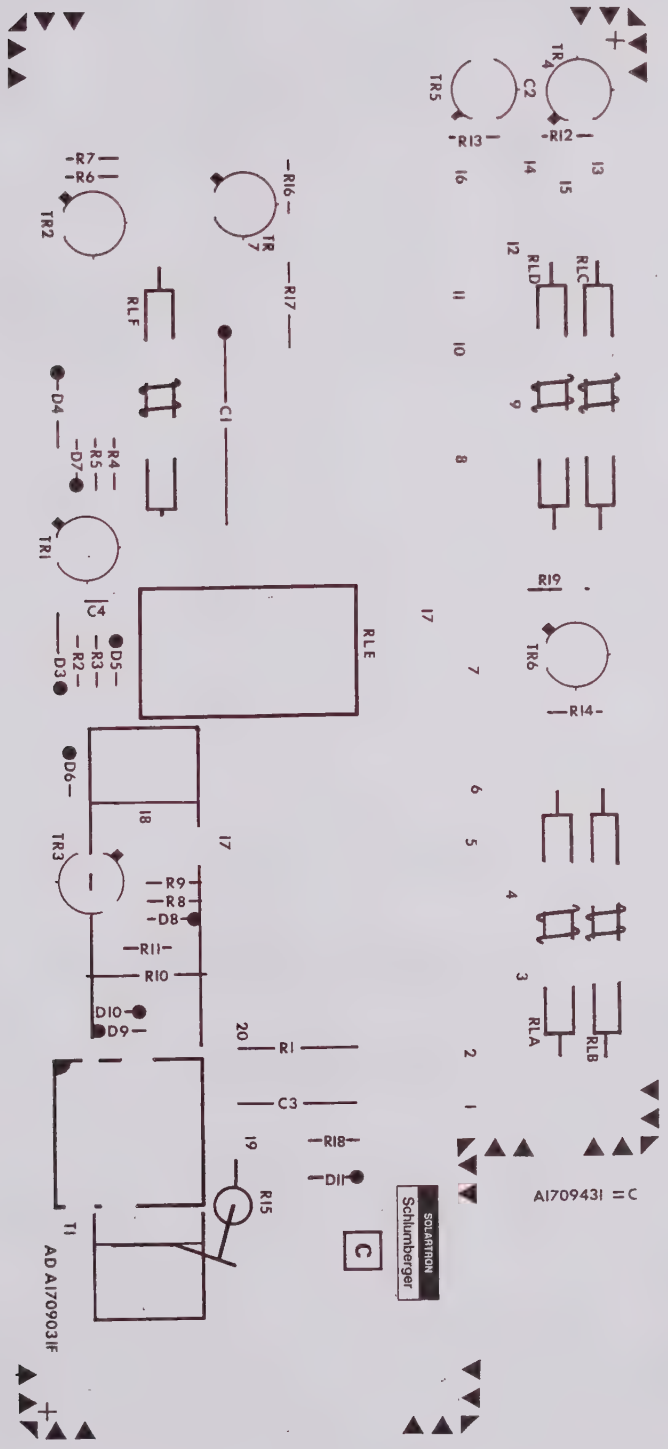
Pin No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
3	632	+5V	
4	420	RH DISPLAY STROBE	
5	295	LH DISPLAY STROBE	
6	490	STORE SYNC	
7	632	0V	
8	412	RADIANS	
9	301	LH DISPLAY EXP 8	
10	298	LH DISPLAY EXP 1	
11	299	LH DISPLAY EXP 2	
12	300	LH DISPLAY EXP 4	
13	340	MOS STORE DATA OUTPUT 2	
14	339	MOS STORE DATA OUTPUT 1	
15	342	MOS STORE DATA OUTPUT 8	
16	341	MOS STORE DATA OUTPUT 4	
18	128	DISPLAY CARTES	
19	251	INVALID	
20	330	mHz NEON	
21	553	VOLTS NEON	
22	328	MHz NEON	
23	289	kHz NEON	
24	213	Hz NEON	

COMPONENT LAYOUT, 1170 PCB No. 30

Printed Circuit Board A1709131
(Power Supply Protection)

Cct Ref.	General Description				Solartron Part No.
R1	MEOX	270	1W	5%	193422700
R2	CACP	100	1/8W	10%	172021000
R3	CACP	47	1/8W	10%	172014700
R4	CACP	47	1/8W	10%	172014700
R5	CACP	100	1/8W	10%	172021000
R6	CACP	470	1/8W	10%	172024700
R7	CACP	1k	1/8W	10%	172031000
R8	CACP	270	1/8W	10%	172022700
R9	CACP	10	1/8W	10%	172011000
R10	POWW	0.3	2.5W	5%	173400300
R11	CACP	10k	1/8W	10%	172041000
R12	CACP	220	1/8W	10%	172022200
R13	CACP	470	1/8W	10%	172024700
R14	CACP	470	1/8W	10%	172024700
R15	POWW	0.1	2.5W	10%	173500100
R16	CACP	1k	1/8W	10%	172031000
R17	CACP	270	1/8W	10%	172022700
R18	CACP	1k	1/8W	10%	172031000
R19	CACP	100	1/8W	10%	172021000
C1	TAND	100	20V	20%	265881000
C2	CERM	0.047	25V	+50% −25%	241944700
C3	ESTM	0.1			220351000
C4	CERM	0.047	25V	+50% −25%	241944700
D1	IS420				300520690
D2	BTY91				300522310
D3	Zener	4.7V			300521470
D4	Zener	15V			300521390
D5 to D7	SD3				300522160
D8	SD3				300522160
D9	BA 148				300525070
D10	BA 148				300525070
D11	SD3				300522160
TR1 to TR3	2N4037				300553170
TR4	BCY70				300553590
TR5	BCY70				300553590
TR6	BFY50				300553610
TR7	BC107				300553320
RLE	Relay 22/2CH 185				300651920
T1	Driver Transformer +5V				309604302

COMPONENT LAYOUT, 1170 PCB No. 31



PARTS LIST, 1170 PCB No. 33

Printed Circuit Board A1709133
(Neon Board "A")

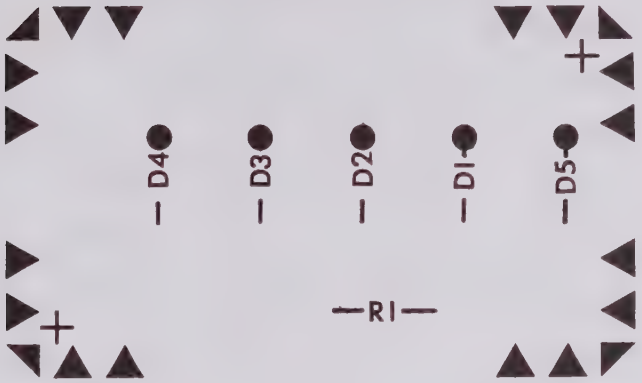
Cct Ref.	General Description	Solartron Part No.
R1	CACP 47k	172044700
R2 to R6	CACP 2.2M	172062200
D1 to D5	BA 148	300525070
LP1 to LP5	Neon 16 H/5	300720300

PARTS LIST, 1170 PCB No. 35

Printed Circuit Board A1709135
(Capacitor Board)

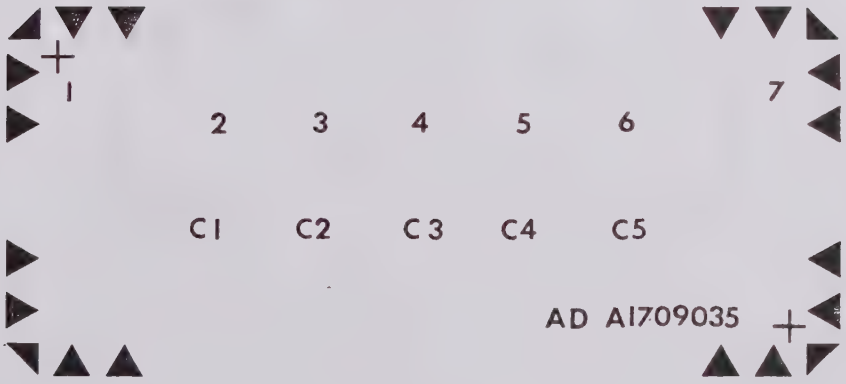
Cct Ref.	General Description	Solartron Part No.
C1 to C5	CERM 0.1 30V	242051000

COMPONENT LAYOUT, 1170 PCB No. 33



Resistors R2 to R6 on PCB No. 33 are added by hand soldering after assembly of the board.

COMPONENT LAYOUT, 1170 PCB No. 35



PARTS LIST, 1170 PCB No. 36

Printed Circuit Board A1709136
(Neon Board "B")

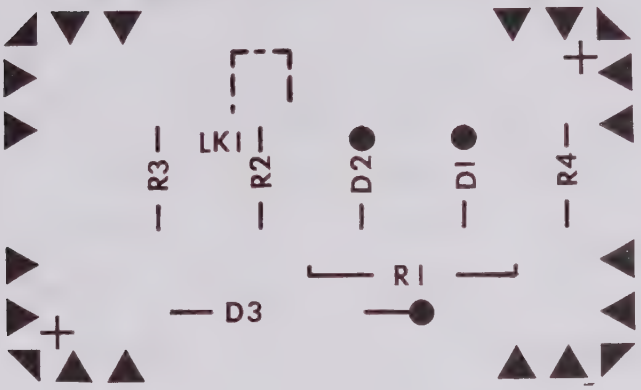
Cct Ref.	General Description	Solartron Part No.
R1 to R4	CACP 47k	172044700
R5	CACP 220k	172052200
R6 to R9	CACP 2.2M	172062200
D1 to D3	BA 148	300525070
LP1 to LP5	Neon 16 H/S	300720300

PARTS LIST, 1170 PCB No. 37

Printed Circuit Board A1709137
(Neon Board "C")

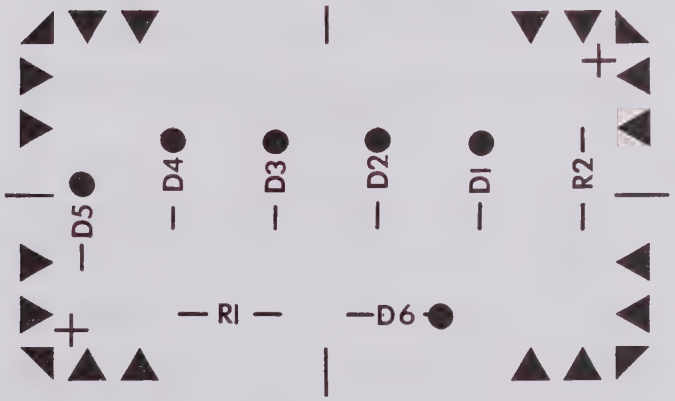
Cct Ref.	General Description	Solartron Part No.
R1 & R2	CACP 47k	172044700
R3 to R7	CACP 2.2M	172062200
D1 to D6	BA 148	300525070
LP1 to LP5	Neon 16 H/S	300720300

COMPONENT LAYOUT, 1170 PCB No. 36



Resistors R5 to R9 on PCB No. 36
and R3 to R7 on PCB No. 37
are added by hand soldering
after assembly of the board.

COMPONENT LAYOUT, 1170 PCB No. 37



PARTS LIST, 1170 PCB No. 38

Printed Circuit Board A1709138
(Neon Board "D")

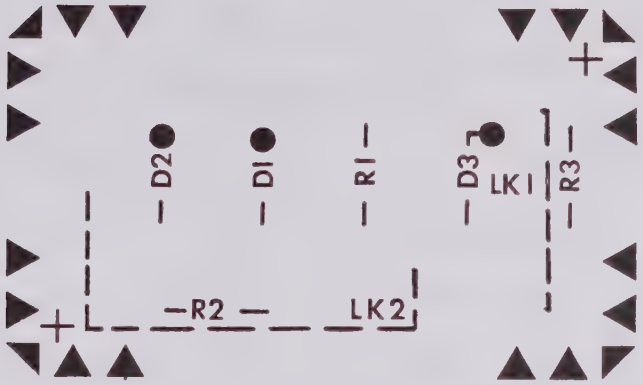
Cct Ref.	General Description	Solartron Part No.
R1 to R3	CACP 47k	172044700
R4 to R7	CACP 2.2M	172062200
D1 to D3	BA 148	300525070
LP1 to LP4	Neon 16H/S	300720300

PARTS LIST, 1170 PCB No. 39

Printed Circuit Board A1709139
(Neon Board "E")

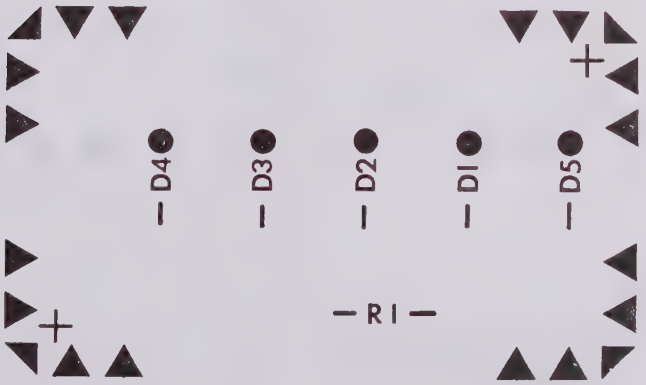
Cct Ref.	General Description	Solartron Part No.
R1	CACP 47k	172044700
R2 to R6	CACP 2.2M	172062200
D1 to D5	BA 148	300525070
LP1 to LP5	Neon 16 H/S	300720300

COMPONENT LAYOUT, 1170 PCB No. 38



Resistors R4 to R7 on PCB No. 38
and R2 to R6 on PCB No. 39
are added by hand soldering
after the assembly of the board.

COMPONENT LAYOUT, 1170 PCB No. 39

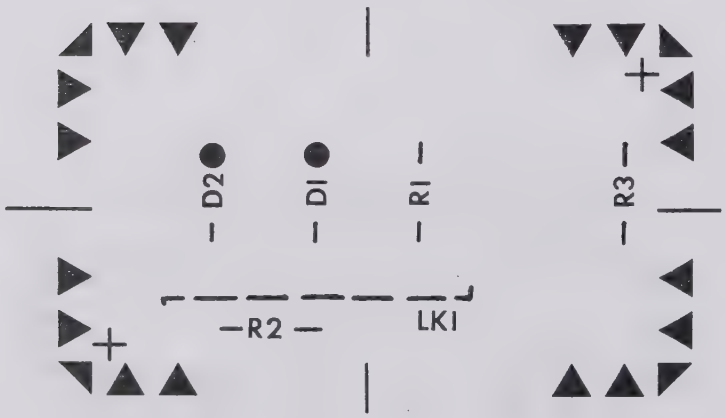


PARTS LIST, 1170 PCB No. 40

Printed Circuit Board A1709140
(Neon Board "F")

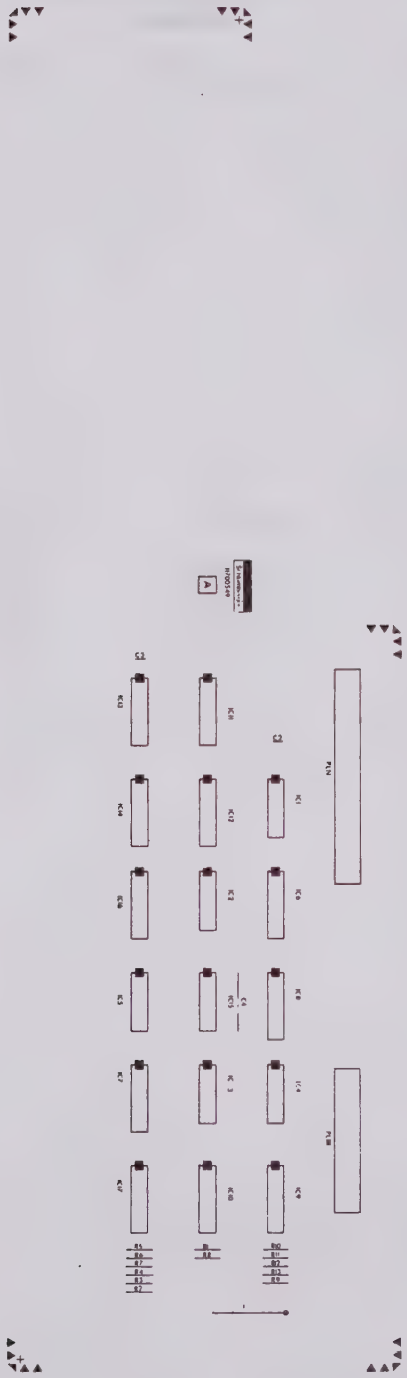
Cct Ref.	General Description		Solartron Part No.
R1 to R3	CACP	47k	172044700
R4 to R7	CACP	2.2M	172062200
D1 & D2	BA 148		300525070
LP1 to LP4	Neon 16 H/S		300720300

COMPONENT LAYOUT, 1170 PCB No. 40



Resistors R4 to R7 on PCB No. 40 are added by hand soldering after assembly of the board.

COMPONENT LAYOUT, 1170 PCB 49

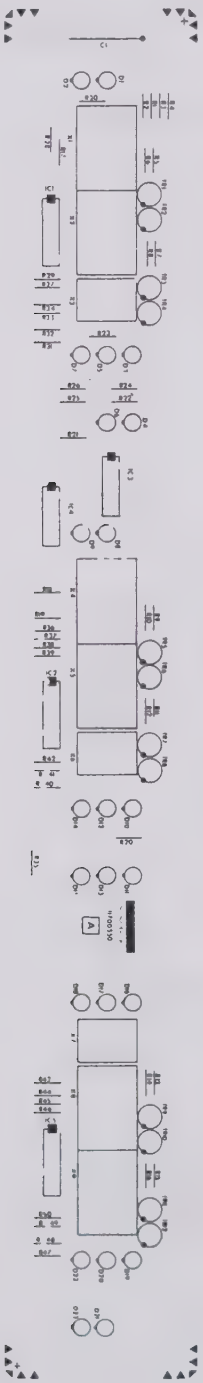


PARTS LIST 1170 PCB 49

Printed Circuit Board 11709049
(LED Display)

Cct Ref.	General Description				Solartron Part No.
R1 to R13	CACP	2.7K	¼W	10%	172032700
C1	ALME	220µ	10V		273182200
C2 and C3	CERM	47n			241944700
C4	ESTF	3.3n			222333300
IC1 and IC2		SN7404N			510000410
IC3		SN7403N			510001200
IC4		SN7400N			510000340
IC5		SN7407N			510000750
IC6		SN74157N			510001280
IC7 to IC9		SN7445N			510000900
IC10		SN74153N			510001390
IC11 and IC12		SN7475N			510000350
IC13 and IC14		SN74175N			510001310
IC15		SN74121N			510000530
IC16		SN7445N			510000900
IC17		SN74153N			510001390
PLM		16 Way Hypertac			352316070
PLN		24 Way Hypertac			352324110

COMPONENT LAYOUT, 1170 PCB 50



PARTS LIST 1170 PCB 50

Printed Circuit Board 11709050
(LED Display)

Cct Ref.	General Description				Solartron Part No.
R1 to R4	CACP	1K	¼W	10%	172031000
R5 to R16	CACP	150	¼W	10%	172021500
R17 to R50	CACP	47	¼W	10%	172014700
C1	ALME	220µ	10V		273182200
D1 to D23		LED 4494			300750080
TR1 to TR12		2N4403			300555570
IC1 and IC2		SN74247N			510004350
IC3		SN7438N			510002110
IC4		SN7406N			510000760
IC5		SN74247N			510004350
X1		LED MAN 6630			300730380
X2		LED MAN 6610			300730320
X3		LED MAN 6660			300730370
X4		LED MAN 6630			300730380
X5		LED MAN 6610			300730320
X6 and X7		LED MAN 6660			300730370
X8 and X9		LED MAN 6610			300730320
		BERG post			355501070

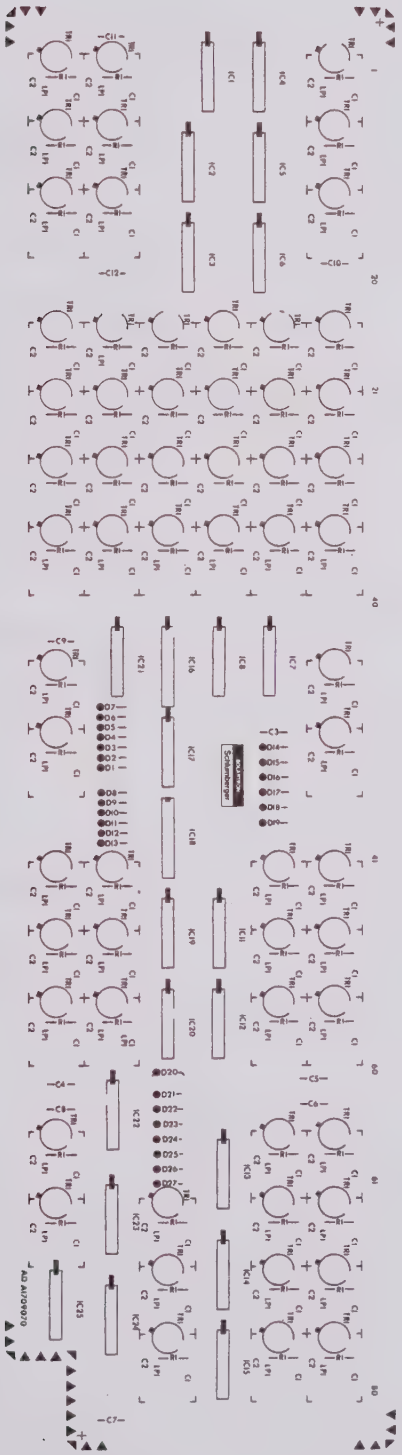
The parts list and component layout of 1170C board 51 appear on pages 2.3.194 and 2.3.195.

PARTS LIST, 1170 PCB No. 70

Printed Circuit Board A1709170
(Front Panel Touch Control)

Cct Ref.	General Description				Solartron Part No.
R1	CACP	100k	0.125W	10%	172051000
C1	CERM	10000p	25V	+50% -25%	241941000
C2	CERM	220pF	500V	20%	241322200
C3 to C12	ESTM	0.1	100V	10%	225451000
D1 to D27	SD3				300522160
TR1	BCY71				300553570
IC1 to IC8	DTuL946				510000160
IC11	DTuL946				510000160
IC12	DTuL946				510000160
IC13	DTuL944				510000140
IC14	DTuL946				510000160
IC15	DTuL946				510000160
IC16	SN7445N				510000900
IC17	DTuL946				510000160
IC18	SN7445N				510000900
IC19 to IC21	DTuL946				510000160
IC22	SN7407N				510000750
IC23 to IC25	DTuL946				510000160
LP1	Vitality	690BP	14V	0.04A	300710880
SK	Minicert				352501630

COMPONENT LAYOUT, 1170 PCB No. 70



PARTS LIST, 1172 PCB No. 1

Printed Circuit Board A1729101

(Mother Board)

Cct Ref.	General Description				Solartron Part No.
R1	MEFM	190	2W	1%	199321902
R2	MEFM	190	2W	1%	199321902
R3	MEOX	330	1/4W	5%	195623300
R4	MEOX	270	1/4W	5%	195622700
C1 to C14	CERM	0.1	30V	+50% -20%	242051000
D1 to D6	BA148				300525070
T1	Inverter	0.7mH			309603606
T2					309605702
T3					309605702
T4 to T7					309605502
T8					309605803
T9					309605803
SK2 to SK4	Connector, 24 way				352524270
SK5 to SK9	Connector, 24 way				352524300
SK10	Connector, 16 way				352516350
SK11	Connector, 24 way				352524300

PARTS LIST, A172 ASSEMBLY

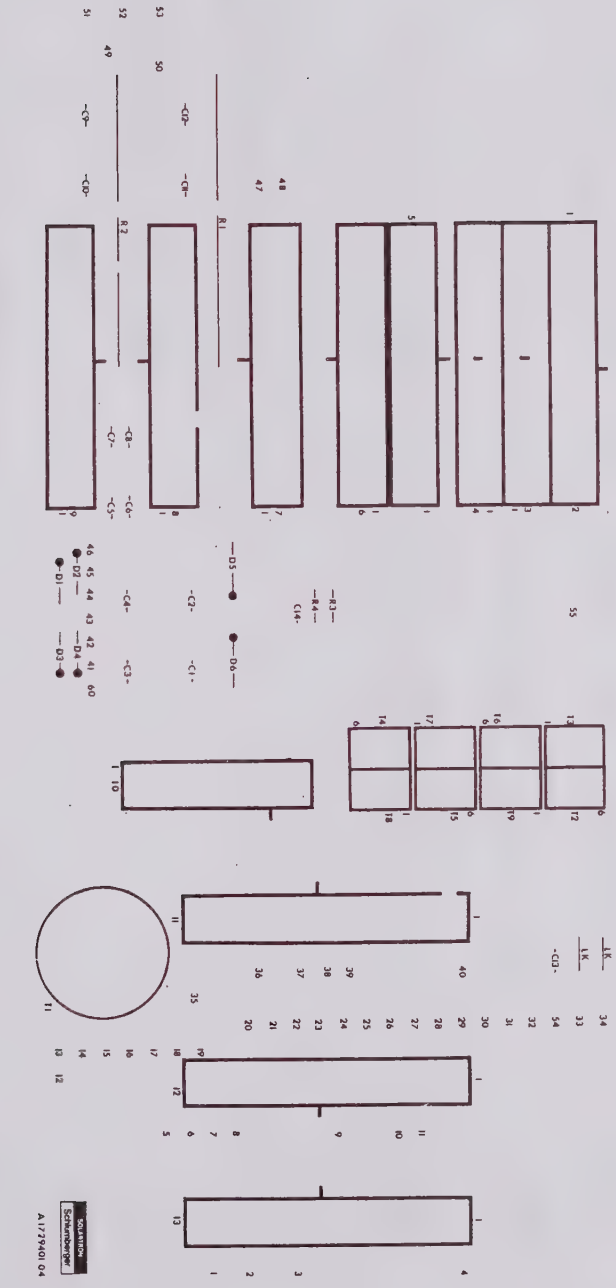
Cct Ref	General Description	Solartron Part No.
PLJ	Plug, 68 way	352368010

DISCONNECT PINS – 1172, PCB No. 1

Pin No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1	211	HOLD RAMP	
2	452	SAMPLE RAMP	
3	628	—16V	
4	503	START RAMP	
5	617	10MHz HI	
6	615	10MHz GROUND	
7	462	SYNTHESISER OUTPUT GROUND	
8	489	SYNTHESISER OUTPUT	
9	632	0V AND E TAG	
10	620	10.2 —12MHz HI	
11	619	10.2 —12MHz GROUND	
12	687		UNCLASSIFIED
13	686		UNCLASSIFIED
14	474	SINE	
15	497	SQUARE	
16	605	$\overline{\text{10kHz RANGE}}$	
17	360	OUTPUT VOLTS EXPONENT 2	
18	359	OUTPUT VOLTS EXPONENT 1	
19	26	$\overline{\text{ADD BIAS POLARITY}}$	
20	606	$\overline{\text{100kHz}}$	
21	388	$\overline{\text{PRE 0}^{\circ}}$	
22	337	MOD	
23	16	ADD BIAS	
24	185	GENERATOR CLOCK	
25	451	SAMPLE OUTPUT VOLTS	
26	597	+5V	
27	450	$\overline{\text{SAMPLE ADD BIAS}}$	
28	463	$\overline{\text{SET 0}^{\circ}}$	
29	91	D/A RESET	
30	629	+18V	
31	189	GENERATOR CARRIER M/S	
32	188	$\overline{\text{GENERATOR CARRIER M/S}}$	
33	187	$\overline{\text{GENERATOR D/A MARK-SPACE}}$	
34	186	GENERATOR D/A MARK-SPACE	
35		0V	T1 ALL CONNECTIONS SHOWN ON CIRCUIT 17
36			
37			
38			
39			
40	629	+18V	
41			
42			
43			
44			
45			
46			
47	384	PROGRAMMABLE ATTENUATOR OUTPUT	
48	356	OUTPUT WAVEFORM	
49	365	OUTPUT MAIN	
50	364	OUTPUT (BIAS)	

Pin No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
51	621	0V GENERATOR	
52	621	0V GENERATOR	
53	88	COMMON 0V (F)	
54	632	0V AND E TAG	
55	621	0V GENERATOR	
56			
57			
58			
59			
60			

COMPONENT LAYOUT, 1172 PCB No. 1



PARTS LIST, 1172 PCB No. 2

Printed Circuit Board A1729102

(D-A Converter)

Cct Ref.	General Description				Solartron Part No.
R1	CACP	2.7K	1/8W	10%	172032700
R2	CACP	560	1/8W	10%	172025600
R3	CACP	560	1/8W	10%	172025600
R4	CACP	1k	1/8W	10%	172031000
R5	CACP	1k	1/8W	10%	172031000
R6	CACP	1.5k	1/8W	10%	172031500
R7	CACP	1k	1/8W	10%	172031000
R8	CACP	1k	1/8W	10%	172031000
R9	MEFM	9.1k	1/8W	0.5%	160400476
R10	CACP	39k	1/8W	10%	172043900
R11	CACP	10k	1/8W	10%	172041000
R12	CACP	10M	1/8W	10%	172071000
R13	CACP	39k	1/8W	10%	172043900
R14	MEFM	9.1k	1/8W	0.5%	160400476
R15	MEFM	10k	1/8W	0.5%	192741004
R16	CACP	4.7k	1/8W	10%	172034700
R17	MEFM	10k	1/8W	0.5%	192741004
R18	CACP	4.7k	1/8W	10%	172034700
R19	MEFM	10k	1/8W	0.5%	192741004
R20	CACP	10k	1/8W	10%	172041000
R21	CACP	4.7k	1/8W	10%	172034700
R22	CACP	39k	1/8W	10%	172043900
R23	CACP	1.5k	1/8W	10%	172031500
R24	CACP	1k	1/8W	10%	172031000
R25	CACP	2.7K	1/8W	10%	172032700
R26	CACP	1.5k	1/8W	10%	172031500
R27	CACP	1k	1/8W	10%	172031000
R28	CACP	1k	1/8W	10%	172031000
R29	CACP	2.2k	1/8W	10%	172032200
R30	CACP	4.7M	1/8W	10%	172064700
R31	CACP	2.2k	1/8W	10%	172032200
R32	CACP	2.7k	1/8W	10%	172032700
R33	CACP	680	1/8W	10%	172026800
C1	CERM	100p	500V	20%	241321000
C2	STYR	0.01	125V	1%	208100181
C3	CERM	3p	500V	20%	241313300
C4	ESTM	0.1	100V	10%	225451000
C5	ESTM	0.1	100V	10%	225451000
C7 to C14	CERM	0.047	25V	+50% -25%	241944700
D1 to D4	SD3				300522160
D5	HCD				300525380
D6 to D9	SD3				300522160
D10	Zener	12V			300521480
D11	SD3				300522160
C14	CERM	.047	25V	+50% −25%	241944700
C15	CERM	150p	500V	20%	241921500
C16	CERM	150p	500V	20%	241921500

Cct. Ref.	General Description				Solartron Part No.
TR1	BCY70				300553590
TR2	U1897E				300553800
TR3	U1897E				300553800
TR4	BC107A				300553320
TR5	U1897E				300553800
TR6	BCY70				300553590
TR7	BCY70				300553590
IC1	MC10116				510004330
IC2	7400				510000340
IC3	LM301A				510000620
IC4	LM310				510090040
IC5	LM310				510090040
IC6	MA741				510000591
IC7	MA741				510000591
RV1	CMPM	2.0k	1/2W	10%	130632000
RV2	CMPM	20k	1/2W	10%	130642000
RV3	CMPM	2.0k	1/2W	10%	130632000
RV4	CMPM	200k	1/2W	10%	130622000
RV5	CMPM	1.0k	1/2W	10%	130631000
RV6	CMPM	1.0k	1/2W	10%	130631000

EDGE CONNECTORS – 1172 PCB No. 2

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1A	625	—5.8V GENERATOR	
2A	623	+1.5V GENERATOR	
5A	363	OUTPUT VOLTS CONTROL	
6AB	338	MODULATE (F)	
7AB	25	ADD BIAS —VE VOLTS	
8AB	24	ADD BIAS +VE VOLTS	
10AB	453	SAMPLE ADD BIAS (F)	
11A	198	GENERATOR 10.6V REF	
14AB	626	—15V GENERATOR	
15AB	454	SAMPLE OUTPUT VOLTS (F)	
16AB	621	0V GENERATOR	
17AB	193	GENERATOR D/A MARK-SPACE (F)	
18AB	194	$\overline{\text{GENERATOR D/A MARK-SPACE (F)}}$	
19AB	130	$\overline{\text{D/A RESET (F)}}$	
20AB	129	D/A RESET (F)	
21A	627	+15V GENERATOR	
22A	630	—25V GENERATOR	
23A	622	—1.5V GENERATOR	
24A	624	+3.5V GENERATOR	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

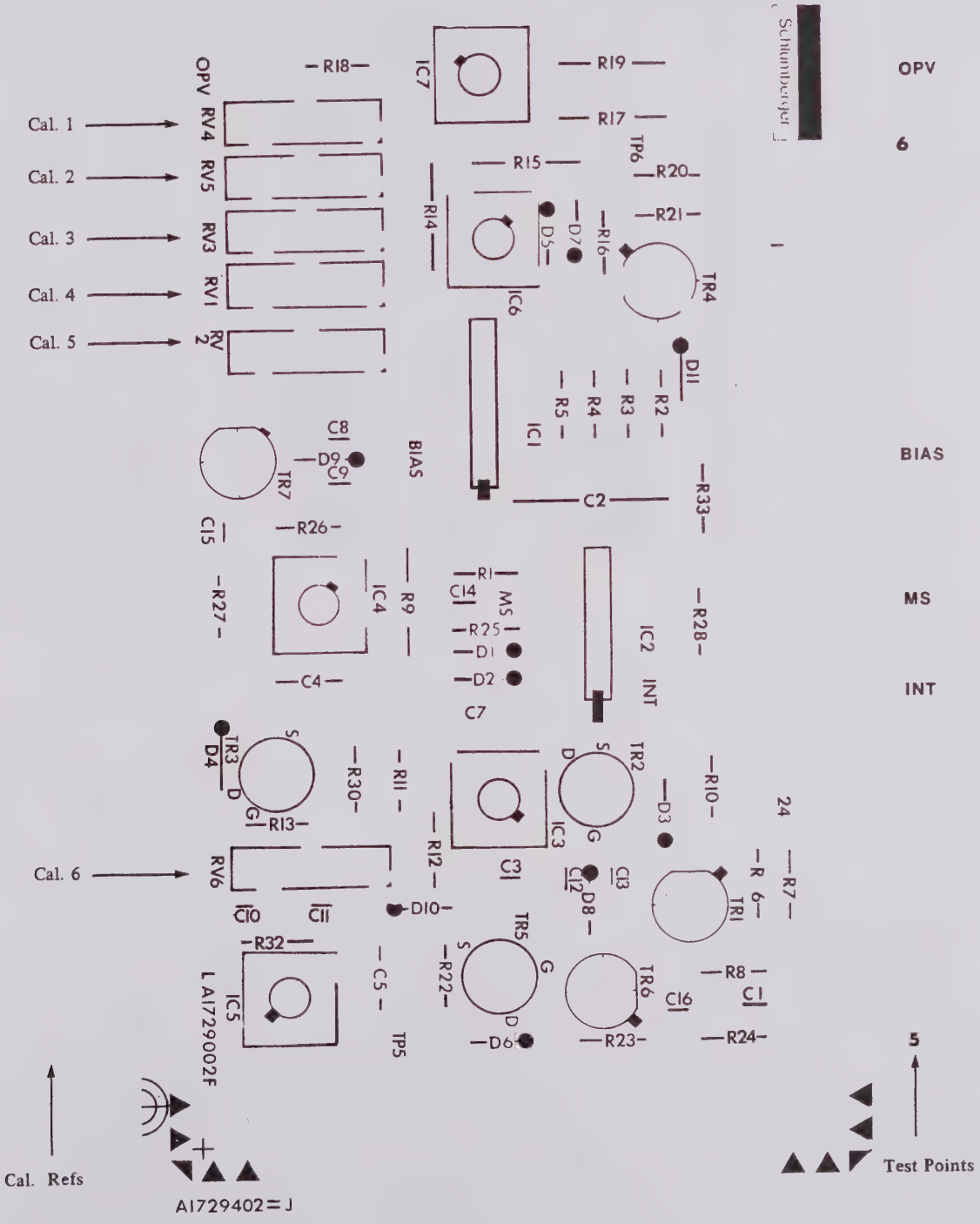
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1172 PCB No. 2 D/A CONVERTER

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	RV4	12/GCA	13.3.7 13.4.2 16.6.2 17.4.1 19.0.1	Adjusts generator control voltage.
2	RV5	12	13.1.5 13.4.5 16.5.5	Zero offset of IC4.
3	RV3	12	13.1.11 13.4.5 16.5.5	Adjusts gain of bias control.
4	RV1	12/GVA	13.1.7 16.3.5	Part of generator voltage control adjustment.
5	RV2	12/GVA	13.1.3 16.3.3	Sets zero offset on IC3.
6	RV6	12/GGA	13.1.4 13.1.8 16.3.4 16.3.6	Sets zero offset on IC5.

COMPONENT LAYOUT, 1172 PCB No. 2



Calibration information is given in Section 3.

Printed Circuit Board A1729103

(Generator Reversible Counter)

Cct Ref.	General Description				Solartron Part No.
R2 R5 to R12	CACP	4.7k	1/8W	10%	172034700
	CACP	1k	1/8W	10%	172031000
C1 C2 to C6	TAND	4.7	10V	20%	265464700
	CERM	.01	25V	+50% -25%	241941000
C7	TAND	4.7	10V	20%	265464700
D5	0A47				300520850
D6	0A47				300520850
IC1	SN7400N				510000340
IC2	SN7406N				510000760
IC3	SN7410N				510000420
IC4	SN7408N				510000830
IC5	SN74190N				510000930
IC6	SN74191N				510000940
IC7	SN74191N				510000940
IC8	SN7400N				510000340
IC9	SN7402N				510000270
IC10	SN7430N				510000430
IC11	SN7476N				510000500
IC12	SN7476N				510000500

EDGE CONNECTORS — 1172, PCB No. 3

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1A	624	+3.5V GENERATOR	
2A	622	—1.5V GENERATOR	
3A	458	SET $\overline{0^{\circ}}$ (F)	
4A	457	SET 0° (F)	
5A	197	GENERATOR CLOCK (F)	
6A	196	GENERATOR CLOCK (F)	
7A	390	PRE $\overline{0^{\circ}}$ (F)	
8AB	389	PRE 0° (F)	
9A	621	0V GENERATOR	
10A	560	WAVEFORM POLARITY +VE	
12A	561	WAVEFORM POLARITY —VE	
14AB	602	10kHz RANGE (F)	
15AB	439	REV COUNTER "1"	
16AB	440	REV COUNTER "2"	
17AB	441	REV COUNTER "4"	
18AB	442	REV COUNTER "8"	
19AB	443	REV COUNTER "10"	
20AB	444	REV COUNTER "20"	
21AB	445	REV COUNTER "40"	
22AB	446	REV COUNTER "80"	
23AB	447	REV COUNTER "160"	
24AB	448	REV COUNTER "320"	

COMPONENT LAYOUT, 1172 PCB No. 3

PARTS LIST, 1172 PCB No. 4

Printed Circuit Board A1729104

(Sine Shaping)

Cct Ref.	General Description				Solartron Part No.
R1	MEFM	8.2k		0.1%	192938204
R2	MEFM	16.45k		0.25%	160400490
R3	MEFM	33k		0.5%	192743301
R4	MEOX	33k	1/4W	1.0%	195343300
R5	MEOX	33k	1/4W	1.0%	195343300
R6	MEFM	270k	1/8W	1%	191252701
R7	MEFM	330k	1/8W	1%	191253302
R8	MEFM	680k	1/8W	1%	191256802
R9	CACP	2.7M	1/8W	10%	172062700
R10	CACP	2.7M	1/8W	10%	172062700
R11	CACP	1M	1/8W	10%	172061000
R12	CACP	1.5M	1/8W	10%	172061500
R13	MEFM	4.7k	1/8W	1%	191234702
R14	MEFM	560	1/8W	1%	191225602
R15	MEFM	470	1/8W	1%	191224702
R16	MEFM	3.9k	1/8W	1%	191233902
R17	MEFM	3k	1/8W	1%	191233002
R18	MEFM	1.8k	1/8W	1%	191231802
R19	CACP	4.7k	1/8W	10%	172034700
R20	CACP	1k	1/8W	10%	172031000
R20 to R22	CACP	1k	1/8W	10%	172031000
R23	CACP	2.2k	1/8W	10%	172032200
R24	CACP	22	1/8W	10%	172012200
R25	CACP	470	1/8W	10%	172024700
R26	CACP	1k	1/8W	10%	172031000
R27	CACP	1M	1/8W	10%	172061000
R28	CACP	470	1/8W	10%	172024700
R29	CACP	1.5k	1/8W	10%	172031500
R30	CACP	220	1/8W	10%	172022200
R31	MEFM	1.5k	1/8W	1%	191231502
R32	MEFM	2.7k	1/8W	1%	191232702
R33	MEFM	5.6k	1/8W	1%	191235602
R34	CACP	470	1/8W	10%	172024700
R35	MEOX	110k	1/4W	1%	195351100
R36	MEOX	68k	1/4W	1%	195346800
R37	MEOX	33k	1/4W	1%	195343300
R38	MEOX	51k	1/4W	1%	195345100
R39	MEOX	12k	1/4W	1%	195341200
R40	MEOX	51k	1/4W	1%	195345100
R41	MEOX	3.9k	1/4W	1%	195333900
R42	MEOX	47k	1/4W	1%	195344700
R43	CACP	4.7k	1/4W	10%	172034700
R44	CACP	150	1/8W	10%	172021500
R45	MEFM	2.2k	1/8W	1%	191232202
R46	MEFM	2.2k	1/8W	1%	191232202
R47	MEFM	22k	1/8W	1%	191242202
R48	MEFM	820	1/8W	1%	191228202
R49	MEFM	5.36k	1/8W	1%	191235364
R50	CACP	39	1/8W	10%	172013900
R51	CACP	1k	1/8W	10%	172031000
R52	CACP	1M	1/8W	10%	172061000
R53	MEFM	5.6k	1/8W	0.5%	192735604
R54	MEOX	33k	1/8W	1%	195343300
R55	MEOX	100k	1/8W	1%	195351000
R56	CACP	2.7M	1/8W	10%	172062700
R57	CACP	4.7k	1/8W	10%	172034700
R58	CACP	100	1/8W	10%	172021000
R59	CACP	1.5k	1/8W	10%	172031500
R60	CACP	1M	1/8W	10%	172061000
C1	ESTM	.01	100V	10%	225441000
C2	CERM	47	500V	20%	241314700
C3	CERM	4700p	500V	20%	241034700
C4	CERM	47	500V	20%	241314700

Cct. Ref.	General Description				Solartron Part No.
C5	CERM	0.047	25		
C5 to C15	CERM	0.047	25V	+50% -25%	241944700
D1 to D24	SD3				300522160
D25	IN825	6.2V			300523050
D26	BAY72				300524530
D27	Zener	4.7V			300521470
D28	SD3				300522160
D29	Hot Carrier				300525380
D30	SD3				300522160
D30 to D40	SD3				300522160
D41	Zener	3.9V		5%	300521420
D42	Zener	3V		5%	300523880
D43	Zener	6.2V		5%	300521240
D44	Zener	2.7V		5%	300523870
TR1	BC107				300553320
TR2	BCY70				300553590
TR3	BCY70				300553590
TR4	BCY70				300553590
TR5	BC107				300553320
TR6	BCY70				300553590
IC1	741C				510000591
IC2	SN7406				510000760
IC3	702C				510000030
IC4	702C				510000030
RV1	CMPM	500	1/2W	10%	130625000
RV2	CMPM	1k	1/2W	10%	130631000
RV3	CMPM	500	1/2W	10%	130625000
RV4	CMPM	20k	1/2W	10%	130642000
RV5	CMPM	500	1/2W	10%	130625000
RV6	CMPM	500	1/2W	10%	130625000
RV7	CMPM	20k	1/2W	10%	130642000

EDGE CONNECTORS – 1172, PCB No. 4

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	624	+3.5V GENERATOR	
2AB	622	—1.5V GENERATOR	
3AB	563	WAVEFORM —VE	
4AB	627	+15V GENERATOR	
6AB	198	GENERATOR 10.6V REF	
7AB	473	$\overline{\text{SINE (F)}}$	
8AB	499	SQUARE (F)	
9AB	621	0V GENERATOR	
10AB	562	WAVEFORM +VE	
11AB	626	—15V GENERATOR	
12AB	604	10kHz RANGE (F)	
13AB	561	WAVEFORM POLARITY —VE	
14A	602	$\overline{\text{10kHz RANGE (F)}}$	
15A	439	REV COUNTER "1"	
16A	440	REV COUNTER "2"	
16B	560	WAVEFORM POLARITY +VE	
17A	441	REV COUNTER "4"	
17B	24	ADD BIAS +VE VOLTS	
18A	442	REV COUNTER "8"	
19A	443	REV COUNTER "10"	
20A	444	REV COUNTER "20"	
21A	445	REV COUNTER "40"	
22A	446	REV COUNTER "80"	
23A	447	REV COUNTER "160"	
24A	448	REV COUNTER "320"	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

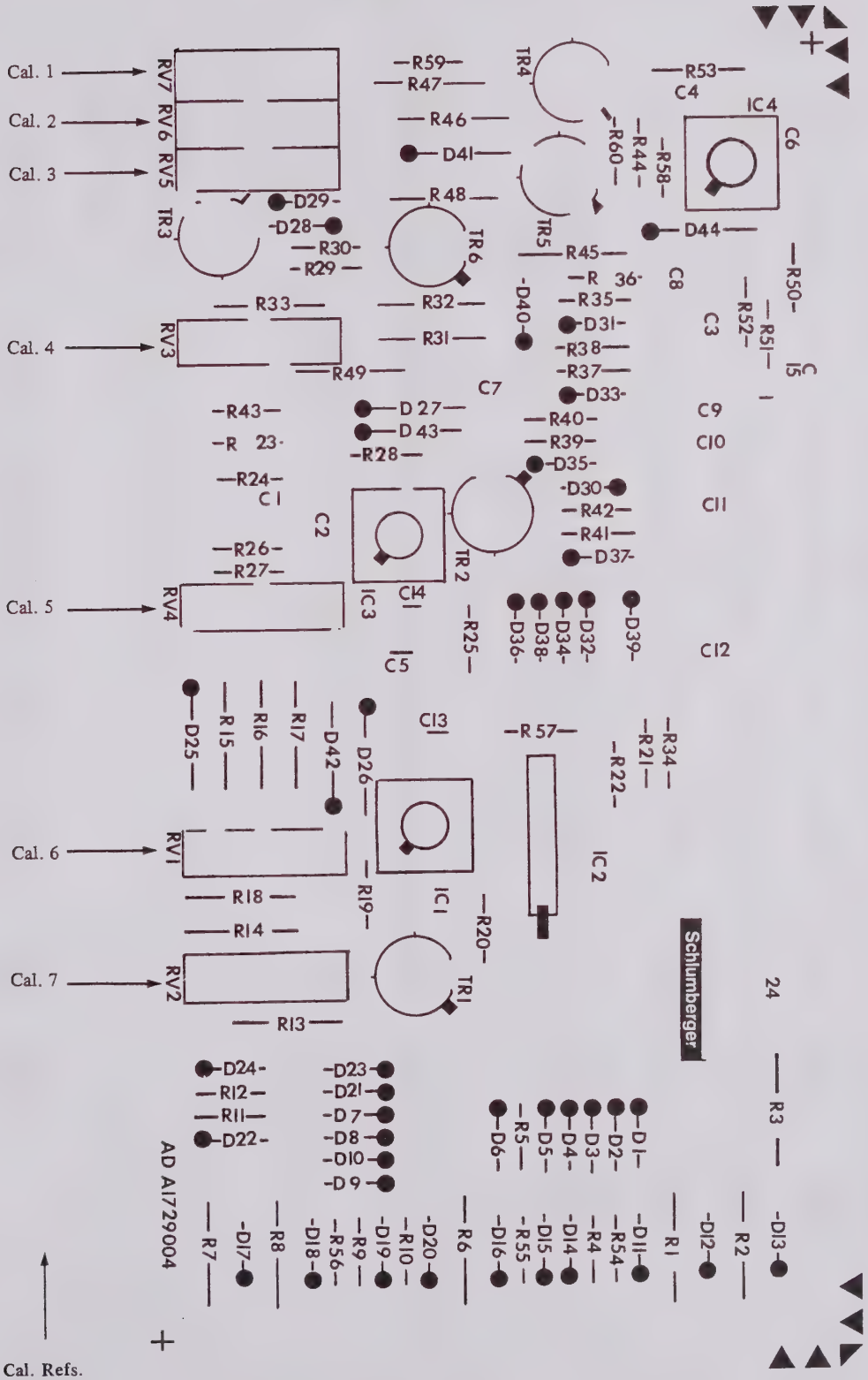
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1172 PCB No. 4 SINE SHAPING

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	RV7	10/CWG	13.0.7 16.2.5 16.5.6	Part of generator set-up.
2	RV6	10/CWG	13.0.9 16.2.7	Part of generator set-up.
3	RV5	10/GWE	13.4.1	Part of generator set-up.
4	RV3	10/GWE	13.4.4 16.5.4	Part of generator set-up.
5	RV4	10/GWE	13.0.6 16.2.4	Part of generator set-up.
6	RV1	10/GWD	13.0.3 16.2.1	Sets generator reference voltage.
7	RV2	10/GWF	13.4.4 16.5.4	Part of generator set-up.

COMPONENT LAYOUT, 1172 PCB No. 4



Calibration information is given in Section 3.

Component Parts List

for

Printed Circuit Board A1729105

(Signal Conditioning)

Cct Ref.	General Description				Solartron Part No.
R2	CACP	220	1/8W	10%	172022200
R3	CACP	220	1/8W	10%	172022200
R4 to R7	MEFM	5.6k	1/8W	0.5%	192735604
R8	CACP	1k	1/8W	10%	172031000
R9	CACP	1k	1/8W	10%	172031000
R10	CACP	22	1/8W	10%	172012200
R11	CACP	2.2M	1/8W	10%	172062200
R12 to R15	MEFM	5.1k	1/8W	0.5%	192735104
R16	MEFM	10k	1/8W	0.1%	192941004
R17	MEFM	10k	1/8W	0.1%	192941004
R18	MEFM	5.6k	1/8W	0.5%	192735604
R19	MEFM	1.5k	1/4W	1%	195331500
R20	CACP	27	1/8W	10%	172012700
R21	MEOX	2.2k	1/8W	10%	195332700
R22	MEFM	2.7k	1/8W	0.5%	192732701
R23	MEOX	680	1/4W	1%	195326800
R24	MEOX	2.7k	1/4W	5%	195632700
R25	MEFM	2.2k	1/8W	0.5%	192732204
R26	MEFM	3.3k	1/8W	0.5%	192733304
R27	CACP	100k	1/8W	10%	172051000
R28	CACP	100k	1/8W	10%	172051000
R34	MEOX	47	1/4W	5%	195614700
R35	CACP	470k	1/8W	10%	172054700
R36	CACP	470k	1/8W	10%	172054700
R37	CACP	1k	1/4W	5%	172031000
R38	CACP	330	1/8W	10%	172023300
R39	CACP	47	1/8W	10%	172014700
R40	CACP	220	1/8W	10%	172022200
R41	CACP	820	1/8W	10%	172028200
R42	CACP	1k	1/8W	10%	172031000
R43	CACP	470	1/8W	10%	172024700
R44	CACP	1k	1/8W	10%	172031000
R45	CACP	3.9k	1/8W	10%	172033900
R46	CACP	10k	1/8W	10%	172041000
R47 to R50	CACP	1.5k	1/8W	10%	172031500
C1	CERM	0.047	25V	+50% -25%	241944700
C2	STYR	220p	125V	10%	210222200
C3	CERM	.047	25V	+50% -25%	241944700
C4	CERM	.047	25V	+50% -25%	241944700
C5	CERM	470p	500V	20%	241324700
C6	CERM	2200p	500V	20%	241332200
C7	STYR	220p	125V	10%	210222200
C8 to C11	CERM	.047	25V	+50% -25%	241944700
C12	CERM	560p	160V	10%	221325600
C13	CERM	470p	500V	20%	241324700
C14	CERM	2200p	500V	20%	241332200
C15	CERM	560p	160V	10%	221325600
C16 to C20	CERM	.047	25V	+50% -25%	241944700
C21	TAND	15	20V	20%	265871500
C22	TAND	15	20V	20%	265871600
C23	CERM	1000p	500V	20%	241331000
C24	CERM	1000p	500V	20%	241331000
C25	CERM	0.047	25V	+50% -25%	241944700
C26	STYR	330p			210123300
C27	MXD	100p			290030130
C28	CERM	.047	25V	+50% -25%	241944700
D1	SD3				300522160
D2	HCD				300525380
D3	HCD				300525380
D4	HCD				300525380
D5	SD3				300522160
D6	HCD				300575380
D7	SD3				300522160
D8	HCD				300525380
D9	HCD				300525380
D10	HCD				300525380
D11	SD3				300522160
D12	HCD				300525380
D13	SD3				300522160
D14	SD3				300522160
D15	HCD				300525380
D16	HCD				300525380
D17	HCD				300525380
D18	SD3				300522160
D19	SD3				300522160
D20	HCD				300525380
D21	SD3				300522160
D22	SD3				300522160
D23	HCD				300525380
D24	HCD				300525380
D25	HCD				300525380
D26	SD3				300527160
D27	SD3				300522160
D28	HCD				300525380
D29	SD3				300522160
D30	SD3				300522160
D31	HCD				300525380
D32	HCD				300525380
D33	SD3				300522160
D34	HCD				300525380
D35 to D39	SD3				300522160
TR1	U1897E				300553800
TR2	U1897E				300553800
TR3	BCY70				300553590
TR4	BC107				300553320
IC1	MA715C				510090140
IC2	MA715C				510090140
IC3	MC10116				510004330
IC4	936				510000290
L1	RF Choke	100		5%	305020400
RV1	WWPS	25k	1/4W	5%	130542500

EDGE CONNECTORS – 1172, PCB No. 5

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLES	REMARKS
1A	624	+3.5V GENERATOR	
2A	622	—1.5V GENERATOR	
3A	563	WAVEFORM —VE	
4A	627	+15V GENERATOR	
5AB	191	GENERATOR CARRIER M/S (F)	
6AB	192	$\overline{\text{GENERATOR CARRIER M/S (F)}}$	
7AB	198	GENERATOR 10.6V REF	
8AB	500	SINE (F)	
9AB	621	0V GENERATOR	
10AB	562	WAVEFORM +VE	
11AB	626	—15V GENERATOR	
12A	561	WAVEFORM POLARITY —VE	
14AB	356	OUTPUT WAVEFORM	
15AB	18	ADD BIAS DRIVE	
16AB	560	WAVEFORM POLARITY +VE	
17A	24	ADD BIAS +VE VOLTS	
18AB	25	ADD BIAS —VE VOLTS	
19A	14	ADD BIAS (F)	
20A	338	MODULATE (F)	
21A	21	ADD BIAS POLARITY (F)	
22A	326	MODULATE GAIN	
23A	623	+1.5V GENERATOR	
24A	625	—5.8V GENERATOR	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

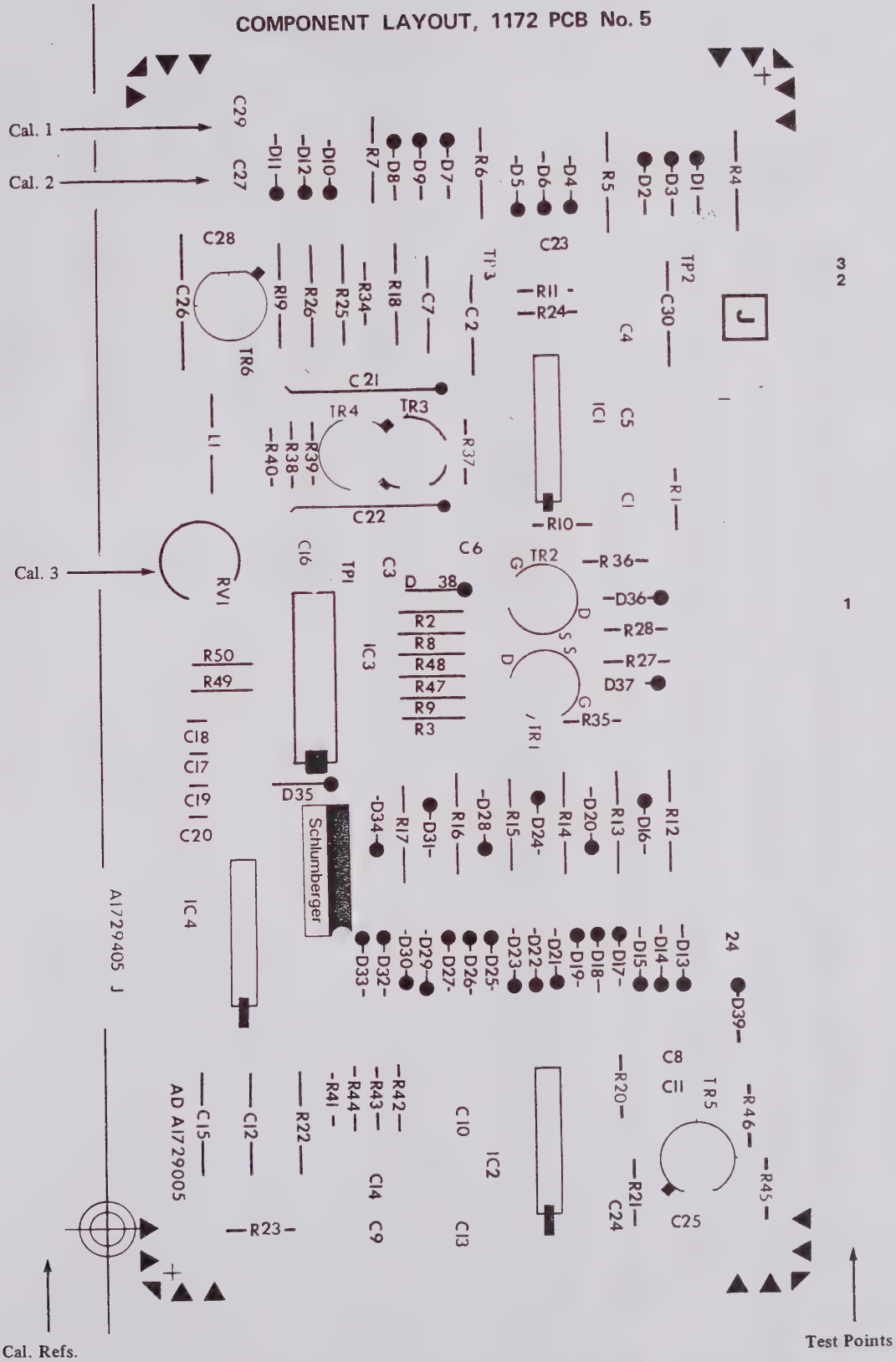
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1172 PCB No. 5 SIGNAL CONDITIONING

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	C29	11/GWH	13.3.9	Part of generator set-up.
2	C27	11/GWH	13.3.9	Part of generator set-up.
3	RV1	11/GWJ	13.0.5 16.2.3	Sets offset of IC1.

COMPONENT LAYOUT, 1172 PCB No. 5



Calibration information is given in Section 3.

PARTS LIST, 1172 PCB No. 6

Printed Circuit Board A1729106

(Programmable Attenuator)

Cct Ref.	General Description				Solartron Part No.
R1	MEOX	4.7k	1/4W	1%	195334700
R2	MEOX	4.7k	1/4W	1%	195334700
R3	MEOX	6.8k	1/4W	1%	195336800
R4	MEOX	10k	1/4W	1%	195341000
R7 to R12	CACP	100	1/8W	10%	172021000
R13	MEOX	1k	1/4W	1%	195331000
R14	MEOX	1k	1/4W	1%	195331000
R15	CACP	100	1/8W	10%	172021000
R16	MEFM	270	1/8W	1%	191222704
R17	CACP	100	1/8W	10%	172021000
R19	MEFM	270	1/8W	1%	191222704
R20	CACP	100	1/8W	10%	172021000
R21	CACP	100	1/8W	10%	172021000
R22	MEFM	2.7k	1/8W	1%	192732704
R23	CACP	100	1/8W	10%	172021000
R24	CACP	100	1/8W	10%	172021000
R25	MEOX	1.2k	1/4W	1%	195331200
R26	CACP	100	1/8W	10%	172021000
R27	MEFM	2.2k	1/8W	0.5%	192732204
R28	MEFM	2.2k	1/8W	0.5%	192732204
R29	MEOX	1k	1/4W	1%	195331000
R30	MEOX	1k	1/4W	1%	195331000
R31	MEOX	680	1/4W	5%	195626800
R32	MEOX	680	1/4W	5%	195626800
R33	CACP	100	1/8W	10%	172021000
R34	CACP	22	1/8W	10%	172012200
R38	CACP	100	1/8W	10%	172021000
R39	MEFM	270	1/8W	1%	191222704
R40	CACP	100	1/8W	10%	172021000
R41	MEFM	270	1/8W	1%	191222704
R42	CACP	100	1/8W	10%	172021000
R43	CACP	100	1/8W	10%	172021000
R44	CACP	470	1/8W	10%	172024700
R46	MEFM	2.61k	1/8W	1%	191232614
R48	CACP	100	1/8W	10%	172021000
R49	CACP	100	1/8W	10%	172021000
R51	CACP	100	1/8W	10%	172021000
R53	MEOX	2k	1/4W	1%	195332000
R54	MEFM	10k	1/8W	0.1%	192941004
R55	MEFM	10k	1/8W	0.1%	192941004
R56	MEFM	10k	1/8W	0.1%	192941004
R57	MEFM	10k	1/8W	0.1%	192941004
R58	CACP	330k	1/4W	10%	172053300
R59	CACP	330k	1/4W	10%	172053500
R60	CACP	2.2M	1/8W	10%	172062200
R61	CACP	1M	1/8W	10%	172061000
R62	CACP	22	1/8W	10%	172012200
R63	MEOX	1k	1/4W	1%	195331000
R64	MEOX	100	1/2W	5%	193521000
R65	MEOX	1k	1/4W	1%	195331000
R66	CACP	100	1/8W	10%	172021000
R67	CACP	100k	1/8W	1%	172051000
R68	CACP	47	1/8W	10%	172014700
R69	CL703L (Photocell)				300540020
R70	MEOX	2.7k	1/4W	1%	195332700
C3	CERM	0.047	25V	+50% -25%	241944700
C4	CERM	47p	500V	20%	241314700
C6	CERM	330p	500V	20%	241323300
C7	CERM	0.047	25V	+50% -25%	241944700
C8	MXD	7 - 35	160V	-10% +70%	290020440
C9	STYR	22p			210512200
C10	CERM	0.01p	25V	+50% -25%	241941000
C11	CERM	0.01	25V	+50%	241941000
C12	CERM	0.01	25V	+50% —25%	241941000
C13	CERM	1000p	500V	20%	241331000
C14	CERM	1000p	500V	20%	241331000
C15	MICA	3.300	200V	1%	208500066
C16	CERM	150p	400V	10%	241321500
C17	MICA	3.300	200V	1%	208500066
C18	CERM	0.01	25V	+50% —25%	241941000
C20	CERM	0.01	25V	+50% —25%	241941000
C22	ESTM	.047	100V	10%	225444700
C40	CERM	.047	25V	+50% —25%	241944700
C41	TAND	2.2	20V	20%	265862200
C42	TAND	2.2	20V	20%	265862200
C43	TAND	1.0	35V	20%	266061000
C44	CERM	0.01	25V	+50%	241941000
C45	CERM	330p	400V	10%	241323300
C46	CERM	.047	25V	+50% —25%	241944700
C47	CERM	.047	25V	+50% —25%	241944700
D1	SZD12				300521480
D2	SZD18				300521300
TR1	2N3053				300551800
IC1	A715C				510090140
IC2	MC1596G				510000700
IC3	5—Transistor array (3045/6)				300554090
IC4	(3045/6)				300554090
IC5 to IC7	A741				510000591
LP1		12V	1.2W		300710310
T1					309603901
T2					309604001
T3					309604101
RV1	CMPM	20k	1/2W	10%	130642000
RV2	CMPM	20k	1/2W	10%	130642000

EDGE CONNECTORS – 1172, PCB No. 6

E.C. No.	INTERCONNECTION LIST DETAILS		REMARKS
	No.	SIGNAL TITLE	
3AB	630	–25V GENERATOR	
4AB	627	+15V GENERATOR	
6AB	198	GENERATOR 10.6V REF	
8AB	500	SINE (F)	
9AB	621	0V GENERATOR	
10AB	621	0V GENERATOR	
11AB	626	–15V GENERATOR	
14AB	356	OUTPUT WAVEFORM	
16AB	384	PROGRAMMABLE ATTENUATOR OUTPUT	
17AB	18	ADD BIAS DRIVE	
20A	363	OUTPUT VOLTS CONTROL	
21AB	631	+25V GENERATOR	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

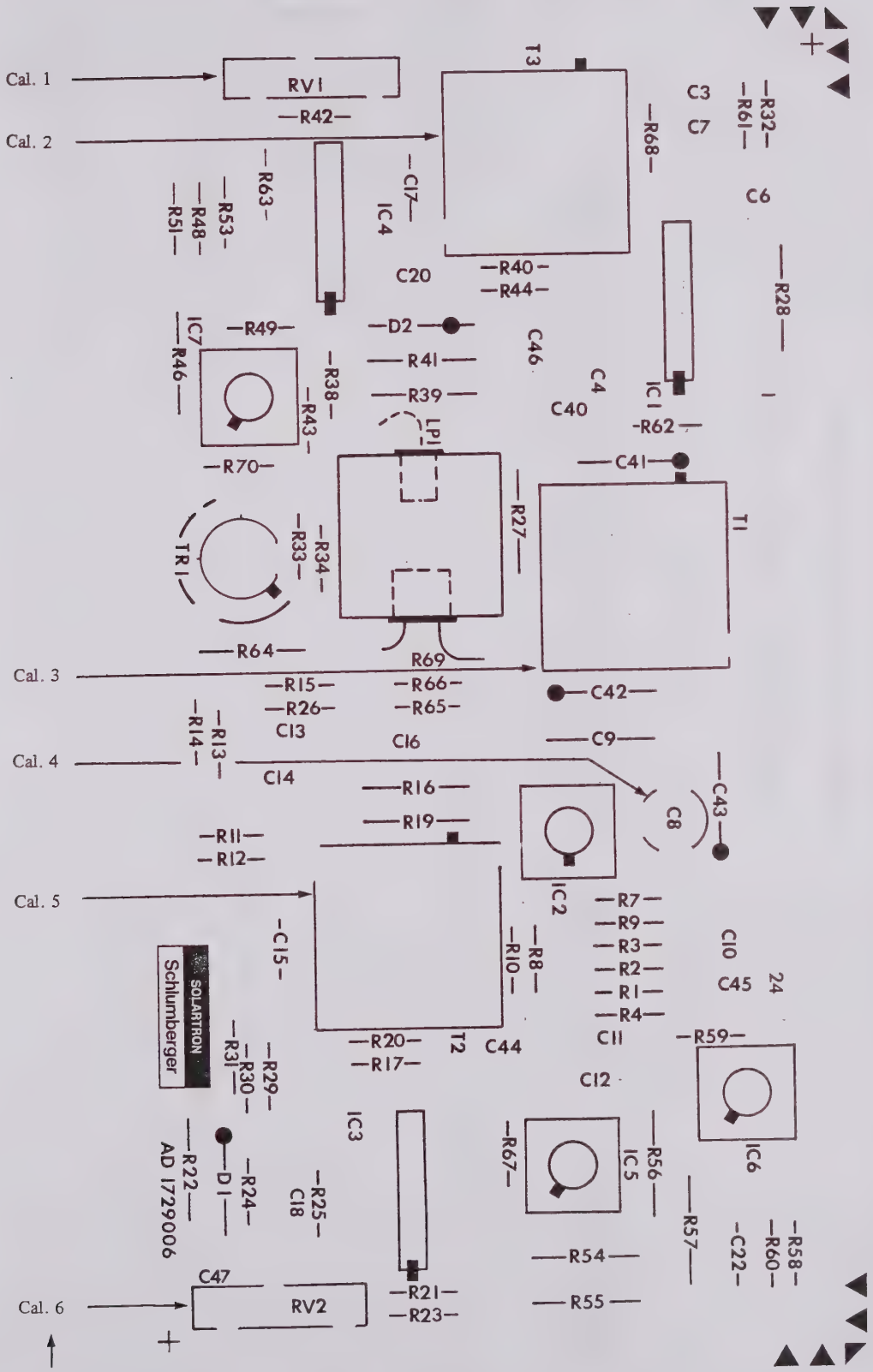
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1172 PCB No. 6 PROG. ATTENUATOR

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	RV1	13/GAA	13.0.12 16.2.10 16.5.6	Part of generator set-up.
2	T3	13/GAA	13.3.3	Part of generator set-up.
3	T1	13/GAA	13.3.5	Part of generator set-up.
4	C8	13/GAA	13.3.5	Part of generator set-up.
5	T2	13/GAB	13.3.3	Part of generator set-up.
6	RV2	13/GAC	13.3.4 13.3.7 13.4.2 19.0.1	Part of generator set-up.

COMPONENT LAYOUT, 1172 PCB No. 6



Calibration information is given in Section 3.

PARTS LIST, 1172 PCB No. 7

Component Parts List

for

Printed Circuit Board A1729107

(Bias Output Amplifier)

Cct Ref.	General Description				Solartron Part No.
R3	MEFM	1k	1/8W	1%	191231002
R4	MEFM	3.9k	1/8W	1%	191233902
R5	MEFM	1k	1/8W	1%	191231002
R6	MEOX	680k	1/2W	1%	195456800
R7	MEFM	47o	1/8W	1%	191224702
R8	MEFM	3.3k	1/8W	1%	191233302
R9	CACP	220	1/8W	10%	172022200
R10	CACP	Ik	1/8W	10%	172031000
R11	CACP	1k	1/8W	10%	172031000
R12	CACP	27k	1/8W	10%	172042700
R13	CACP	10k	1/8W	10%	172041000
R14	CACP	3.3k	1/8W	10%	172033300
R15	CACP	10	1/8W	10%	172011000
R16	CACP	10	1/8W	10%	172011000
R17	MEOX	150	1/4W	5%	195621500
R18	CACP	330	1/8W	10%	172023300
R19	MEOX	5.6k	1/4W	5%	195635600
R20	MEOX	270	1/4W	5%	195622700
R21	MEOX	470	1/4W	5%	195624700
R22	MEOX	5.6k	1/4W	5%	195635600
R23	MEOX	270	1/4W	5%	195622700
R24	MEOX	270	1/4W	5%	195622700
R25	CACP	4.7k	1/8W	10%	172034700
R26	CACP	2.2k	1/8W	10%	172032200
R27	MEOX	10	1/4W	5%	195611000
R28	MEOX	10	1/4W	5%	195611000
R29	CACP	33	1/8W	10%	172013300
R30	CACP	33	1/8W	10%	172013300
R31	CACP	15k	1/8W	10%	172041500
R32	CACP	4.7k	1/8W	10%	172034700
R33	MEFM	12	1/2W	1%	198611202
R34	MEFM	33	1/8W	1%	191213302
R35	MEFM	56	1/8W	1%	191215602
R40	MEFM	820	1/8W	1%	191228202
R47	MEOX	1.5k	1/4W	5%	195631500
R50	CACP	50	1/8W	10%	172021000
C1	CERM	.047	25V	+50% -25%	241944700
C2	CERM	.047	25V	+50% -25%	241944700
C3	STYR	47p	125V	10%	210214700
C4	STYR	150p	125V	10%	210221500
C5	ESTM	0.22	100V	10%	225452200
C6	ESTM	0.22	100V	10%	225452200
C7	CERM	100p	500V	20%	241321000
C8	CERM	22p	500V	20%	241312200
C9	ESTM	0.22	100V	10%	225452200
C10	ESTM	0.022	100V	10%	225442200
C11	STYR	390	125V	2.5%	210123900
C12	STYR	390	125	2.5%	210123900
C13	CERM	.047	25V	-50% +25%	241944700
D1 to D5	SD3				300522160
D6	BAY 72				300524530
D7 D8	BAY 72				300524530
D7	BAY 72				300524530
D8	SD3				300522160
D9	SD3				300522160
TR1	BCY70				300553590
TR2	2N2484				300552860
TR3	MM1613				300552000
TR4	MM1614				300551670
TR5	2N2484				300552860
TR6	2N3053				300551800
TR7	2N4037				300553170
TR8	2N4037				300553170

Cct. Ref.	General Descritpion	Solartron Part No.
TR9	2N3053	300551800
TR10	2N3053	300551800
TR11	BC107A	300553320
TR12	BC107A	300553320
IC1	301A	510000620

RV1	CMPM	20k	1/2W	10%	130642000
RV2	CMPM	50	1/2W	10%	130615000

EDGE CONNECTORS – 1172, PCB No. 7

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	624	+3.5V GENERATOR	
2AB	622	—1.5V GENERATOR	
3AB	630	—25V GENERATOR	
4AB	627	+15V GENERATOR	
8AB	47	BIAS OVERLOAD (F)	
9AB	621	0V GENERATOR	
10AB	621	0V GENERATOR	
11AB	626	—15V GENERATOR	
16A	18	ADD BIAS DRIVE	
21AB	631	+25V GENERATOR	
24A	364	OUTPUT (BIAS)	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

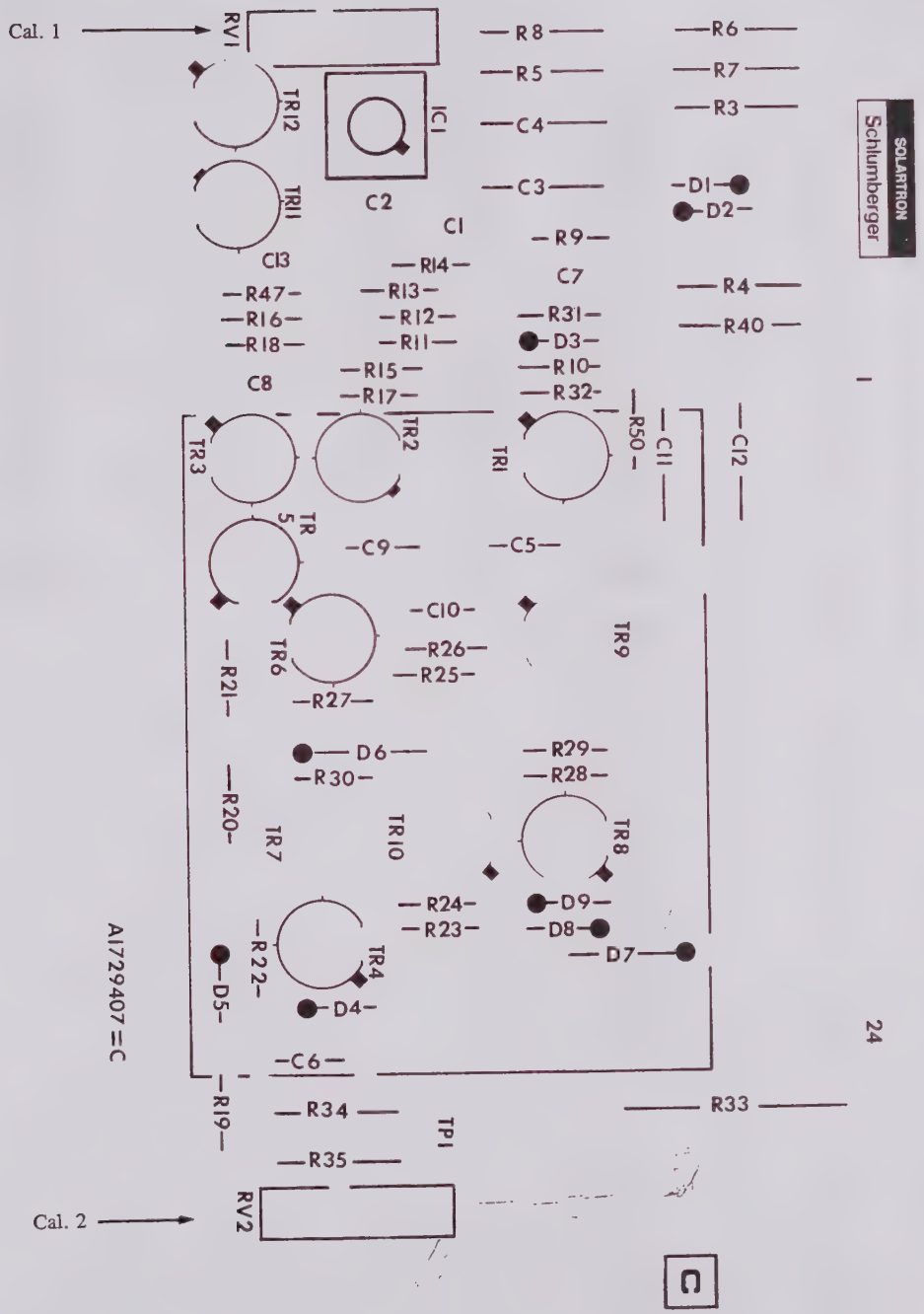
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1172 PCB No. 7 BIAS O/P AMPLIFIER

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	RV1	16/GEA	13.4.5 16.5.5	Part of bias output set-up.
2	RV2	16/GEA	13.4.7	Part of bias output set-up.

COMPONENT LAYOUT, 1172 PCB No. 7



Calibration information is given in Section 3.

PARTS LIST, 1172 PCB No. 8

Printed Circuit Board A1729108

(Output Amplifier)

Cct. Ref.	General Description				Solartron Part No.
R1	MEFM	9.1k	1/8W	0.1%	192939104
R2	MEOX	820k	1/2W	5%	193558200
R3	MEFM	1k	1/8W	0.1%	192931004
R4	MEFM	3.9k	1/8W	0.5%	192733904
R5	MEFM	1k	1/8W	1%	191231002
R6	MEOX	680k	1/2W	1%	195456800
R7	MEFM	470	1/8W	1%	191224702
R8	MEFM	3.3k	1/8W	1%	191233302
R9	CACP	220	1/8W	10%	172022200
R10	CACP	1k	1/8W	10%	172031000
R11	CACP	1k	1/8W	10%	172031000
R12	CACP	27k	1/8W	10%	172042700
R13	CACP	10k	1/8W	10%	172041000
R14	CACP	3.3k	1/8W	10%	172033300
R15	CACP	10	1/8W	10%	172011000
R16	CACP	10	1/8W	10%	172011000
R17	MEOX	150	1/4W	5%	195621500
R18	CACP	330	1/8W	10%	172023300
R19	MEOX	5.6k	1/4W	5%	195635600
R20	MEOX	270	1/4W	5%	195622700
R21	MEOX	470	1/4W	5%	195624700
R22	MEOX	5.6k	1/4W	5%	195635600
R23	MEOX	270	1/4W	5%	195622700
R24	MEOX	270	1/4W	5%	195622700
R25	CACP	4.7k	1/8W	10%	172034700
R26	CACP	2.2k	1/8W	10%	172032200
R27	MEOX	10	1/4W	5%	195611000
R28	MEOX	10	1/4W	5%	195611000
R29	CACP	33	1/8W	10%	172013300
R30	CACP	33	1/8W	10%	172013300
R31	CACP	15k	1/8W	10%	172041500
R32	CACP	4.7k	1/8W	10%	172034700
R33	MEFM	12	1/2W	1%	198611202
R34	MEFM	33	1/8W	1%	191213302
R35	MEFM	56	1/8W	1%	191215602
R36	MEFM	100	1/2W	1%	198621004
R37	MEFM	560	1/8W	1%	191225602
R38	MEFM	12	1/8W	1%	191211204
R39	MEFM	150	1/8W	1%	191221502
R40	MEFM	820	1/8W	1%	191228202
R43	CACP	100k	1/8W	10%	172051000
R45	CACP	4.7k	1/8W	10%	172034700
R46	CACP	4.7k	1/8W	10%	172034700
R47	MEOX	1.5k	1/4W	5%	195631500
R48	CACP	470k	1/8W	10%	172054700
R49	CACP	10k	1/8W	10%	172041000
R50	CACP	100	1/8W	10%	172021000
C1	CERM	.047	25V	+50% −25%	241944700
C2	CERM	.047	25V	+50% −25%	241944700
C3	STYR	47p	125V	10%	210214700
C4	STYR	150p	125V	10%	210221500
C5	ESTM	0.22	100V	10%	225452200
C6	ESTM	0.22	100V	10%	225452200
C7	CERM	100p	500V	20%	241321000
C8	CERM	22p	500V	20%	241312200
C9	ESTM	0.22	100V	10%	225452200
C10	EXTM	0.022	100V	10%	225442200
C11	STYR	390p	125V	2.5%	210123900
C12	STYR	390p	125V	2.5%	210123900
C13	CERM	047	25V	+50% −25%	241944700
C14	STYR	56p	160V	± 2.5%	210115600
D1 to D5	SD3				300522160
D6	BAY72				300524530
D7	BAY72				300524530
D8	SD3				300522160
D9	SD3				300522160
D11 to D13	SD3				300522160
D14	SZD12				300521480
D15	SD3				300522160
D16	SD3				300522160
TR1	BCY70				300553590
TR2	2N2484				300552860
TR3	MM1613				300552000
TR4	MM1614				300551670
TR5	2N2484				300552860
TR6	2N3053				300551800
TR7	2N4037				300553170
TR8	2N4037				300553170
TR9	2N3053				300551800
TR10	2N3053				300551800
TR11	BC107A				300553320
TR12	BC107A				300553320
TR13	UI897E				300553800
IC1	301A				510000620
IC2	7406				510000760
RV1	CMPM	20k	1/2W	10%	130642000
RV2	CMPM	50	1/2W	10%	130615000
RV3	CMPM	2k	1/2W	10%	130632000
RLA					300651780
RLB					300651780
RLC					300651780
RLD					300651780

EDGE CONNECTORS – 1172, PCB No. 8

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	624	+3.5V GENERATOR	
2AB	622	—1.5V GENERATOR	
3AB	630	—25V GENERATOR	
4AB	627	+15V GENERATOR	
8A	362	OUTPUT OVERLOAD (F)	
9AB	621	0V GENERATOR	
10AB	621	0V GENERATOR	
11AB	626	—15V GENERATOR	
16A	384	PROGRAMMABLE ATTENUATOR OUTPUT	
18A	500	SINE (F)	
20AB	351	$\overline{\text{OUTPUT VOLTS EXPONENT 2 (F)}}$	
21AB	631	+25V GENERATOR	
22AB	353	$\overline{\text{OUTPUT VOLTS EXPONENT 1 (F)}}$	
23AB	88	COMMON 0V (F)	
24AB	365	OUTPUT (MAIN)	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

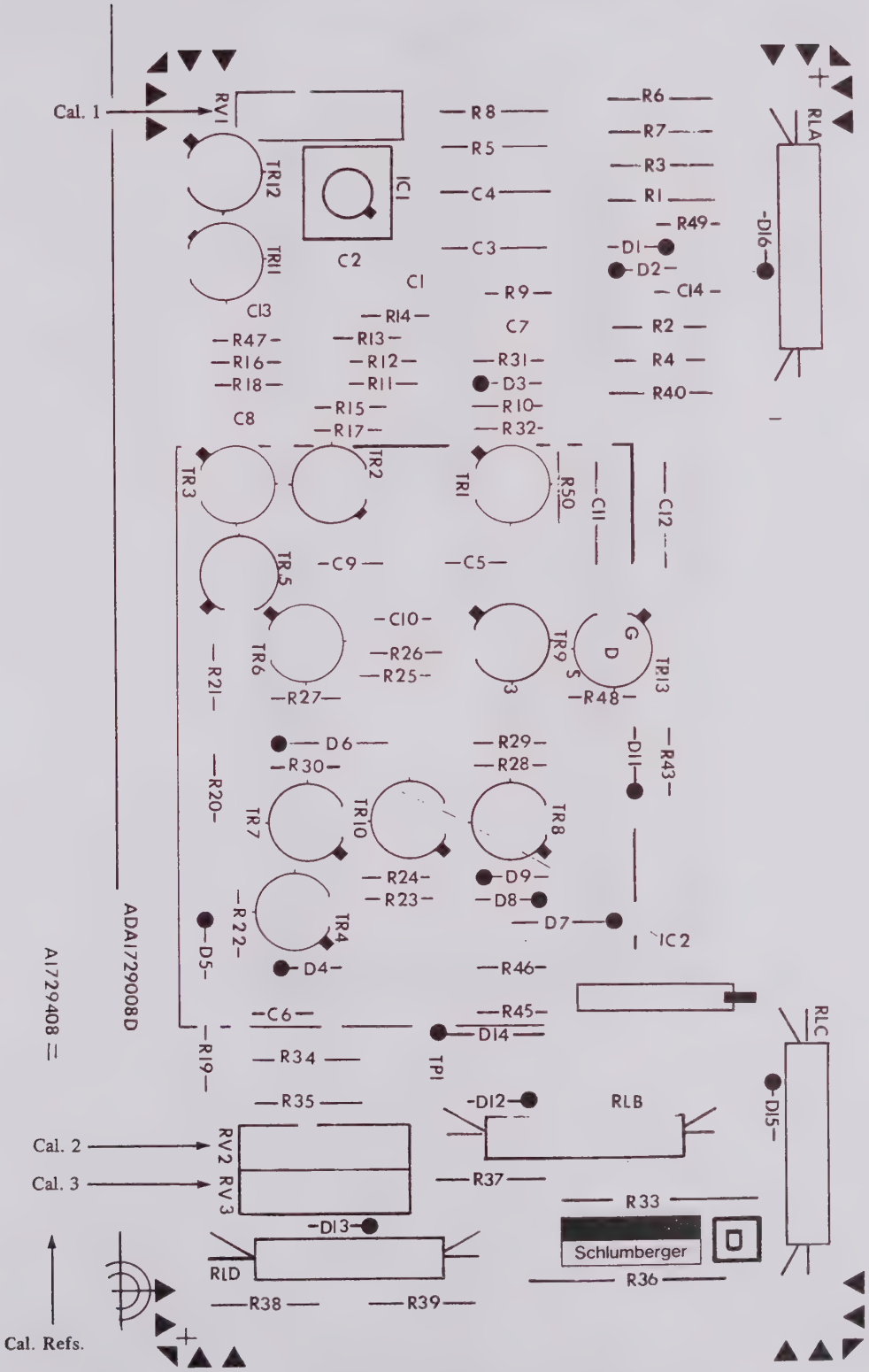
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1172 PCB No. 8 O/P AMPLIFIER

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	RV1	14/GOA	13.0.13 16.2.11	Part of generator set-up.
2	RV2	14/GOA	13.4.6	Part of generator set-up.
3	RV3	14/GOA	13.4.3 16.5.3	Part of generator set-up.

COMPONENT LAYOUT, 1172 PCB No. 8



Calibration information is given in Section 3.

PARTS LIST, 1172 PCB No. 9

(Power Supply)

Cct. Ref.	General Description				Solartron Part No.
R1	MEOX	1k	1/2W	1%	195431000
R2	MEOX	1k	1/2W	1%	195431000
R3	CACP	47	1/8W	10%	172014700
R4	CACP	47	1/8W	10%	172014700
R5	CACP	1k	1/8W	10%	172031000
R6	CACP	1k	1/8W	10%	172031000
R7	CACP	10k	1/8W	10%	172041000
R8	POWW	22	1.5W	5%	173412200
R9	POWW	22	1.5W	5%	173412200
R10	CACP	10k	1/8W	10%	172041000
R11	MEOX	1k	1/2W	1%	195431000
R12	MEOX	9.1k	1/2W	1%	195439100
R13	MEOX	3.3k	1/2W	1%	195433300
R14	CACP	47	1/8W	10%	172014700
R15	MEOX	3.3k	1/2W	1%	195433300
R16	MEOX	47	1/8W	10%	195414700
R17	CACP	10	1/4W	10%	172311000
R18	POWW	150	1.5W	5%	173421500
R19	CACP	820	1/4W	10%	172328200
R20	POWW	1.5	1.5W	5%	173401500
C1 to C3	TAND	47	35V	20%	266074700
C2	TAND	47	35V	20%	266074700
C4	TAND	330	6V	20%	265283300
C10	TAND	47	35V	20%	266074700
C11	CERM	0.01		20%	241941000
D3	SZD16	16V		5%	300521320
D4	SZD16	16V		5%	300521320
D5	SD3				300522160
D6	SZD	6.8V		5%	300522540
L1	Choke R.F. Fixed				305020360
L2	Choke R.F. Fixed				305020360
L3	Choke R.F. Fixed				305020360
L4	Choke R.F. Fixed				305020360
L5	Choke R.F. Fixed				305020360
L6					
L7	Choke Fixed				305020360
L8					
TR1	BC 107A				300553320
TR2	BC 107A				300553320
TR3	2N 4037				300553170
TR4	2N 3053				300551800
TR5	2N 4037				300553170
TR6	2N 3053				300551800
TR7	2N 4037				300553170
RV1	CMPM	1k	1/2W	10%	130631000
RV2	CMPM	200	1/2W	10%	130622000
RV3	CMPM	200	1/2W	10%	130622000

EDGE CONNECTORS – 1172, PCB No. 9

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1A	624	+3.5V GENERATOR	
2A	622	—1.5V GENERATOR	
2B			SEE CIRCUIT 17
3A	630	—25V GENERATOR	
3B			SEE CIRCUIT 17
4A	627	+15V GENERATOR	
5B			SEE CIRCUIT 17
6B			SEE CIRCUIT 17
7B	621	0V GENERATOR	
9AB	621	0V GENERATOR	
10AB	621	0V GENERATOR	
11B	621	0V GENERATOR	
11A	626	—15V GENERATOR	
21A	631	+25V GENERATOR	
23A	623	+1.5V GENERATOR	
24A	625	—5.8V GENERATOR	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

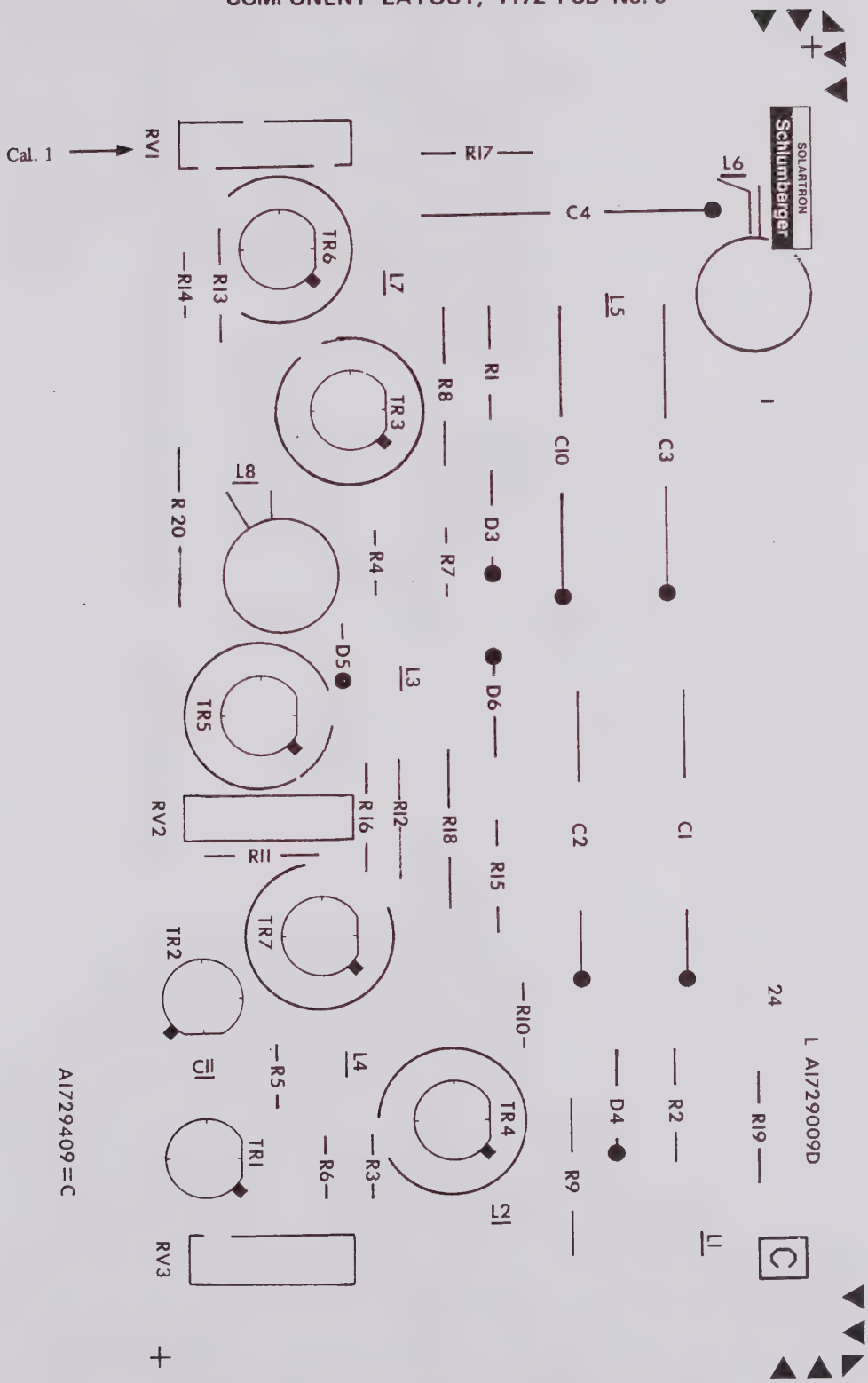
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1172 PCB No. 9 POWER SUPPLY

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	RV1	17/GPD	13.0.4 16.2.2 16.4.1	Sets generator +1.5V supply.

COMPONENT LAYOUT, 1172 PCB No. 9



Calibration information is given in Section 3.

PARTS LIST, 1172 PCB No. 10

Printed Circuit Board A1729110

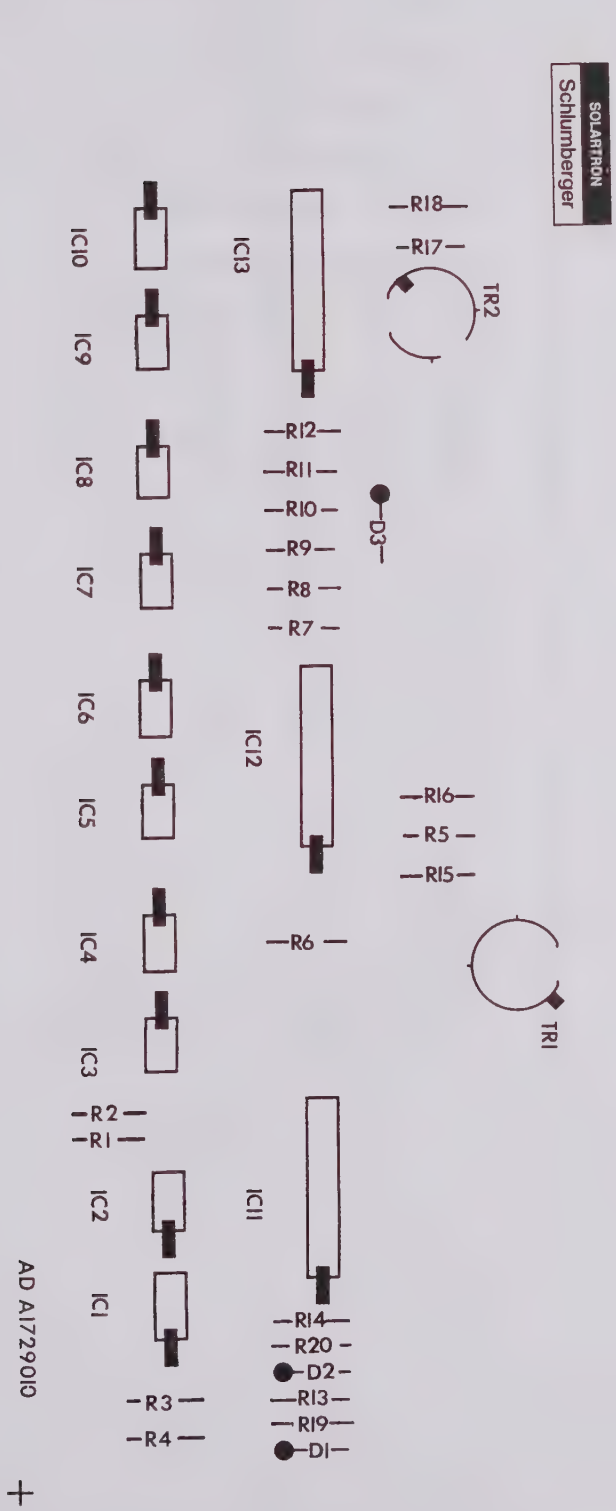
(Interface)

Cct. Ref.	General Description				Solartron Part No.
R1	CACP	56k	1/8W	10%	172045600
R2	CACP	56k	1/8W	10%	172045600
R3	CACP	560	1/8W	10%	172025600
R4	CACP	560	1/8W	10%	172025600
R5 to R12	CACP	56k	1/8W	10%	172045600
R13	CACP	4.7k	1/8W	10%	172034700
R14	CACP	4.7k	1/8W	10%	172034700
R15 to R18	CACP	22k	1/8W	10%	172042200
R19	CACP	56k	1/8W	10%	172045600
R20	CACP	56k	1/8W	10%	172045600
D1	SD3				300522160
D2	SD3				300522160
D3	OA447				300520850
TR1	BCY70				300553590
TR2	BCY70				300553590
IC1 to IC10	MCT2				300540140
IC11	SN15836N				510000290
IC12	SN74L04N				510001040
IC13	SN74L04N				510001040

EDGE CONNECTORS – 1172, PCB No. 10

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1A	686	U/C	
1B	687	U/C	
2A	632	0V	
2B	597	+5V	
3A	472	$\overline{\text{SINE}}$	
3B	498	$\overline{\text{SQUARE}}$	
4A	603	10kHz RANGE	
4B	352	$\overline{\text{OUTPUT VOLTS EXPONENT 2}}$	
5A	354	$\overline{\text{OUTPUT VOLTS EXPONENT 1}}$	
5B	27	ADD BIAS POLARITY	
6A	15	ADD BIAS (C)	
6B	329	$\overline{\text{MOD}}$	
8AB	621	0V GENERATOR	
9A	351	$\overline{\text{OUTPUT VOLTS EXPONENT 2 (F)}}$	
9B	353	$\overline{\text{OUTPUT VOLTS EXPONENT 1 (F)}}$	
10A	47	BIAS OVERLOAD (F)	
10B	362	OUTPUT OVERLOAD (F)	
11A	624	+3.5V GENERATOR	
11B	622	—1.5V GENERATOR	
12A	21	ADD BIAS POLARITY (F)	
12B	326	MODULATE GAIN	
14A	604	10kHz RANGE (F)	
14B	338	MODULATE (F)	
15A	473	$\overline{\text{SINE (F)}}$	
15B	499	SQUARE (F)	
16A	14	ADD BIAS (F)	
16B	500	SINE (F)	

COMPONENT LAYOUT, 1172 PCB No. 10



PARTS LIST, 1172 PCB No. 11

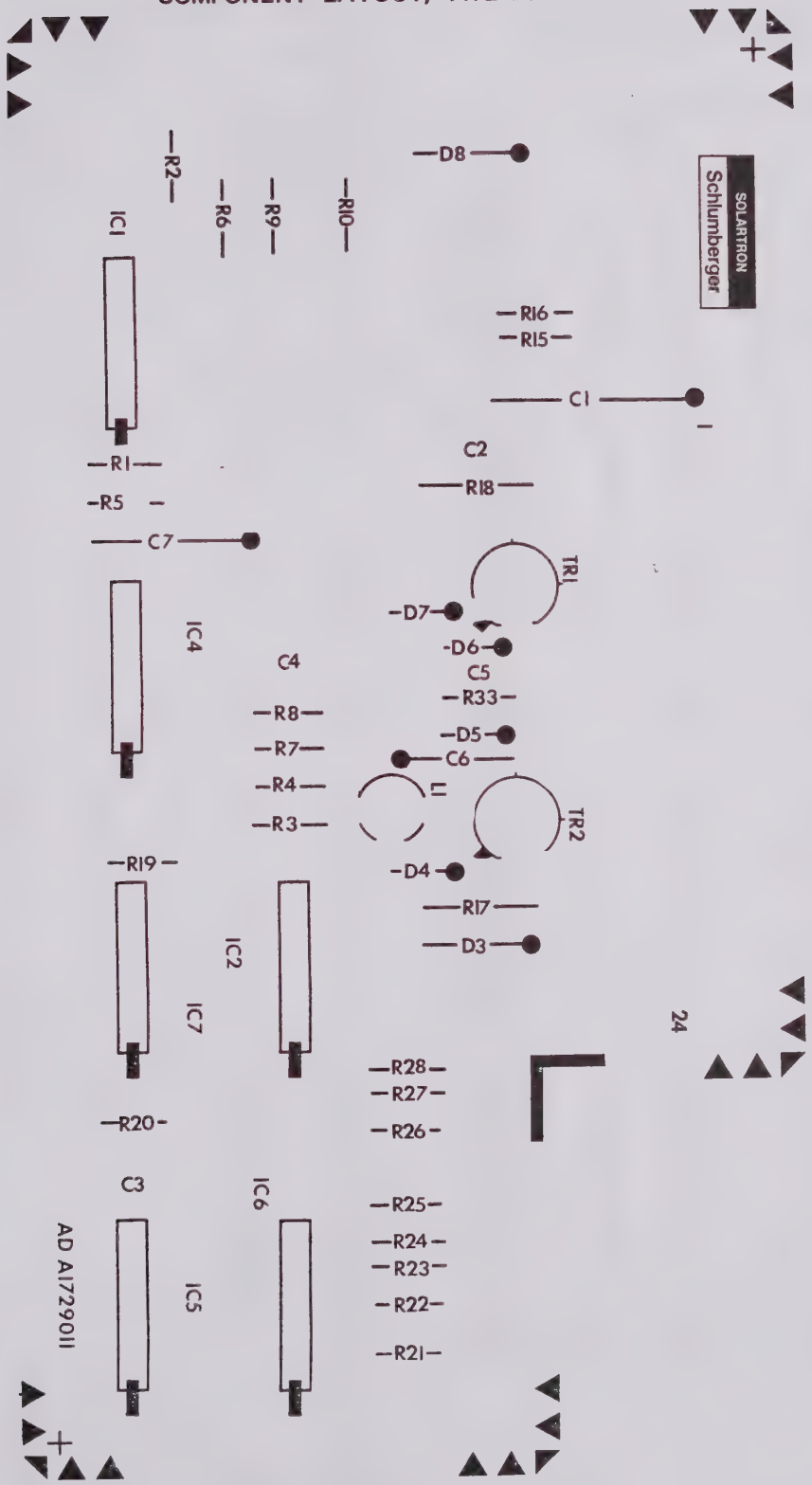
Printed Circuit Board A1729111

(Interface Driver)

Cct. Ref.	General Description				Solartron Part No.
R1	CACP	180	1/8W	10%	172021800
R2	CACP	180	1/8W	10%	172021800
R3 to R5	CACP	1k	1/8W	10%	172031000
R6	CACP	180	1/8W	10%	172021800
R7	CACP	1.8k	1/8W	10%	172031800
R8	CACP	2.7k	1/8W	10%	172032700
R9	CACP	180	1/8W	10%	172021800
R10	CACP	180	1/8W	10%	172021800
R15	CACP	4.7k	1/8W	10%	172034700
R16	CACP	4.7k	1/8W	10%	172034700
R17	CACP	22	1/4W	10%	172312200
R18	CACP	22	1/4W	10%	172312200
R19	CACP	1k	1/8W	10%	172031000
R20	CACP	330	1/8W	10%	172023300
R21 to R28	CACP	560	1/8W	10%	172025600
R33	CACP	10	1/8W	10%	172011000
C1	TAND	22	35V	20%	266072200
C2 to C4	CERM	0.047	25V	+50% -25%	241944700
C5	CERM	0.01	250V	20%	208450036
C6	TAND	4.7	10V	20%	265464700
C7	TAND	4.7	6V	20%	265274700
D3	Zener	4.7V		5%	300521470
D4	SD3				300522160
D5	BAY72				300524530
D6	BAY72				300524530
D7	SD3				300522160
D8	Zener	4.7V		5%	300521470
TR1	BFX34				300554540
TR2	BFX34				300554540
IC1	SN7406N				510000760
IC2	SN7400N				510000340
IC4	SN7440N				510000440
IC5	SN7413N				510000710
IC6	SN7406N				510000760
IC7	SN7413N				510000570
L1		56			305020360

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1A	507	$\overline{\text{SAMPLE ADD BIAS}}$	
1B	629	+18V	
2A	508	$\overline{\text{SAMPLE ADD BIAS RETURN}}$	
2B	91	D/A RESET	
3A	509	$\overline{\text{SAMPLE OUTPUT VOLTS}}$	
3B	463	$\overline{\text{SET 0}^{\circ}}$	
4A	510	$\overline{\text{SAMPLE OUTPUT VOLTS RETURN}}$	
4B	450	SAMPLE ADD BIAS	
5A	392	$\overline{\text{PRE 0}^{\circ}}$ PULSE	
6A	393	$\overline{\text{PRE 0}^{\circ}}$ PULSE	
6B	451	SAMPLE OUTPUT VOLTS	
7A	501	$\overline{\text{SET 0}^{\circ}}$	
7B	190	$\overline{\text{GENERATOR CLOCK}}$	
8A	502	$\overline{\text{SET 0}^{\circ}}$ RETURN	
8B	195	$\overline{\text{GENERATOR CLOCK RETURN}}$	
9A	131	$\overline{\text{D/A RESET}}$	
9B	16	ADD BIAS	
10A	132	$\overline{\text{D/A RESET RETURN}}$	
10B	185	GENERATOR CLOCK	
11AB			SEE CIRCUIT 17
12AB			SEE CIRCUIT 17
14A			SEE CIRCUIT 17
14B	337	MOD	
15AB	597	+5V	
16A			SEE CIRCUIT 17
16B	388	$\overline{\text{PRE 0}^{\circ}}$	
17A	329	$\overline{\text{MOD}}$	
17B	606	100kHz	
18A	15	ADD BIAS (C)	
18B	632	0V	
19A	27	ADD BIAS POLARITY	
19B	26	$\overline{\text{ADD BIAS POLARITY}}$	
20A	354	$\overline{\text{OUTPUT VOLTS EXPONENT 1}}$	
20B	359	OUTPUT VOLTS EXPONENT 1	
21A	352	$\overline{\text{OUTPUT VOLTS EXPONENT 2}}$	
21B	360	OUTPUT VOLTS EXPONENT 2	
22A	603	10kHz RANGE	
22B	605	$\overline{\text{10kHz RANGE}}$	
23A	498	$\overline{\text{SQUARE}}$	
23B	497	SQUARE	
24A	472	$\overline{\text{SINE}}$	
24B	474	SINE	

COMPONENT LAYOUT, 1172 PCB No. 11



PARTS LIST, 1172 PCB No. 12

Printed Circuit Board A1729112

(Oscillator Mixer)

Cct Ref.	General Description				Solartron Part No.
R1	MEOX	2.2k	1/4W	5%	195632200
R2	MEOX	2.2k	1/4W	5%	195632200
R3	MEOX	1k	1/4W	5%	195631000
R4	MEOX	10k	1/4W	5%	195641000
R5	MEOX	4.7k	1/4W	5%	195634700
R6	CACP	100	1/8W	10%	172021000
R7	CACP	100	1/8W	10%	172021000
R8	CACP	1k	1/8W	10%	172031000
R9	CACP	2.2k	1/8W	10%	172032200
R10	CACP	100	1/8W	10%	172021000
R11	CACP	1k	1/8W	10%	172031000
R12	CACP	39	1/8W	10%	172013900
R13	MEOX	4.7k	1/4W	5%	195634700
R14	MEOX	4.7k	1/4W	5%	195634700
R15	MEOX	1k	1/4W	5%	195631000
R16	MEOX	1k	1/4W	5%	195631000
R17	MEOX	10k	1/4W	5%	195641000
R18	MEOX	10k	1/4W	5%	195641000
R19	CACP	100	1/8W	10%	172021000
R20	CACP	100	1/8W	10%	172021000
R21	CACP	100	1/8W	10%	172021000
R22	CACP	10k	1/8W	10%	172041000
R23	MEOX	5.6k	1/4W	5%	195635600
R25	MEOX	1k	1/4W	5%	195631000
R26	MEOX	4.7k	1/4W	5%	195634700
R27	MEOX	4.7k	1/4W	5%	195634700
R28	MEOX	470	1/4W	5%	195624700
R31	MEOX	1k	1/4W	5%	195631000
R32	MEOX	1k	1/4W	5%	195631000
R33	CACP	100	1/8W	10%	172021000
R34	CACP	1k	1/8W	10%	172031000
R35	CACP	39	1/8W	10%	172013900
R36	CACP	680	1/8W	10%	172026800
R37	CACP	680	1/8W	10%	172026800
R38	CACP	10k	1/8W	10%	172041000
R39	CACP	10k	1/8W	10%	172041000
R40	MEOX	3.3k	1/4W	5%	195633300
R41	MEOX	3.3k	1/4W	5%	195633300
R42	CACP	4.7k	1/8W	10%	172034700
R43	CACP	1k	1/8W	10%	172031000
R44	CACP	3.9k	1/8W	10%	172033900
R45	CACP	2.2k	1/8W	10%	172032200
R46	CACP	1.8k	1/8W	10%	172031800
R47	CACP	390	1/8W	10%	172023900
R48	CACP	100	1/8W	10%	172021000
R49	CACP	1k	1/8W	10%	172031000
R50	CACP	2.2k	1/8W	10%	172032200
R51	CACP	39	1/8W	10%	172013900
R52	CACP	4.7k	1/8W	10%	172034700
R53	CACP	1.5k	1/8W	10%	172031500
R54	CACP	150	1/4W	10%	172321500
R55	CACP	4.7k	1/8W	10%	172034700
R56	CACP	1k	1/8W	10%	172031000
C1	CERM	7/35p	160V	-10% +70%	290020440
C2	STYR	150p	500V	1%	210321500
C3	STYR	150p	500V	1%	210321500
C4	CERM	.047	25V	+50% -25%	241944700
C5	CERM	.047	25V	+50% -25%	241944700
C6	CERM	.047	25V	+50% -25%	241944700
C7	CERM	.047	25V	+50% -25%	241944700
C8	CERM	1000p	500V	20%	241331000
C9	TAND	2.2	20V	20%	265862200
C10	CERM	.047	25V	+50% -25%	241944700
C11	CERM	.01	25V	+50% -25%	241941000
C12	CERM	.01	25V	+50% -25%	241941000
C13	CERM	1000p	500V	20%	241331000
C14	CERM	.01	25V	+50% -25%	241941000
C15	CERM	47p	500V	20%	241314700
C16	CERM	33p	500V	20%	241313300
C17	CERM	1500p	500V	10%	208400087
C18	CERM	1500p	500V	10%	208400087
C19	CERM	.01	25V	+50% -25%	241941000
C20	CERM	.01	25V	+50% -25%	241941000
C21	ESTM	.047	100V	10%	225444700
C23	ESTM	.047	100V	10%	225444700
C24	CERM	10p	500V	20%	241311000
C25	CERM	47p	500V	20%	241314700
C26	CERM	.01	25V	+50% -25%	241941000
C27	CERM	.01	25V	+50% -25%	241941000
C28	CERM	1000p	500V	20%	241331000
C29	CERM	.01	25V	+50% -25%	241941000
C30	CERM	.01	25V	+50% -25%	241941000
C31	CERM	1000p	500V	20%	241331000
C32	CERM	.047	25	+50% -25%	241944700
C33	CERM	.047	25	+50% -25%	241944700
C44	CERM	.047	25	+50% -25%	241944700
C45	CERM	.047	25	+50% -25%	241944700
C46	CERM	.047	25	+50% -25%	241944700
C47	CERM	.047	25	+50% -25%	241944700
C48	CERM	.047	25V	+50% -25%	241944700
C49	CERM	1000p	500V	20%	241331000
C50	CERM	10p	500V	20%	241311000
C51	TAND	68	15V	20%	265676800
D1	BA111				300524920
D2	SD3				300522160
D3	Zener	5.6V		5%	300521450
TR1	2N2369				300552390
TR2	2N2369				300552390
TR3	2N2369				300552390
TR4	BFW11				300554270
TR5	2N2369				300552390
TR6	2N4037				300553170
IC1	SN75107A				510000770
IC2	SN75107A				510000770
IC3	ML65969				510000700
X1					300810200
L1	56			10%	305020360
L2	3.3				305030480
L3	56			10%	305020360
L4	56			10%	305020360
L5		100			305020400
L6		100			305020400
RV1	CMPM	10k	1/2W	10%	130641000
RV2	CMPM	20k	1/2W	10%	130642000
RV3	CMPM	10k	1/2W	10%	130641000

EDGE CONNECTORS – 1172, PCB No. 12

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
2AB	168	FREQ. CONTROL VOLTAGE GROUND	
3AB	167	FREQ. CONTROL VOLTAGE HI	
5AB	619	10.2 —12MHz GROUND	
6AB	620	10.2 —12MHz HI	
7AB	629	+18V	
9AB	597	+5V	
11AB	632	0V	
12AB	632	0V	
15AB	628	—16V	
20AB	489	SYNTHESISER OUTPUT	
21AB	462	SYNTHESISER OUTPUT GROUND	
22AB	615	10MHz GROUND	
23A	617	10MHz HI	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

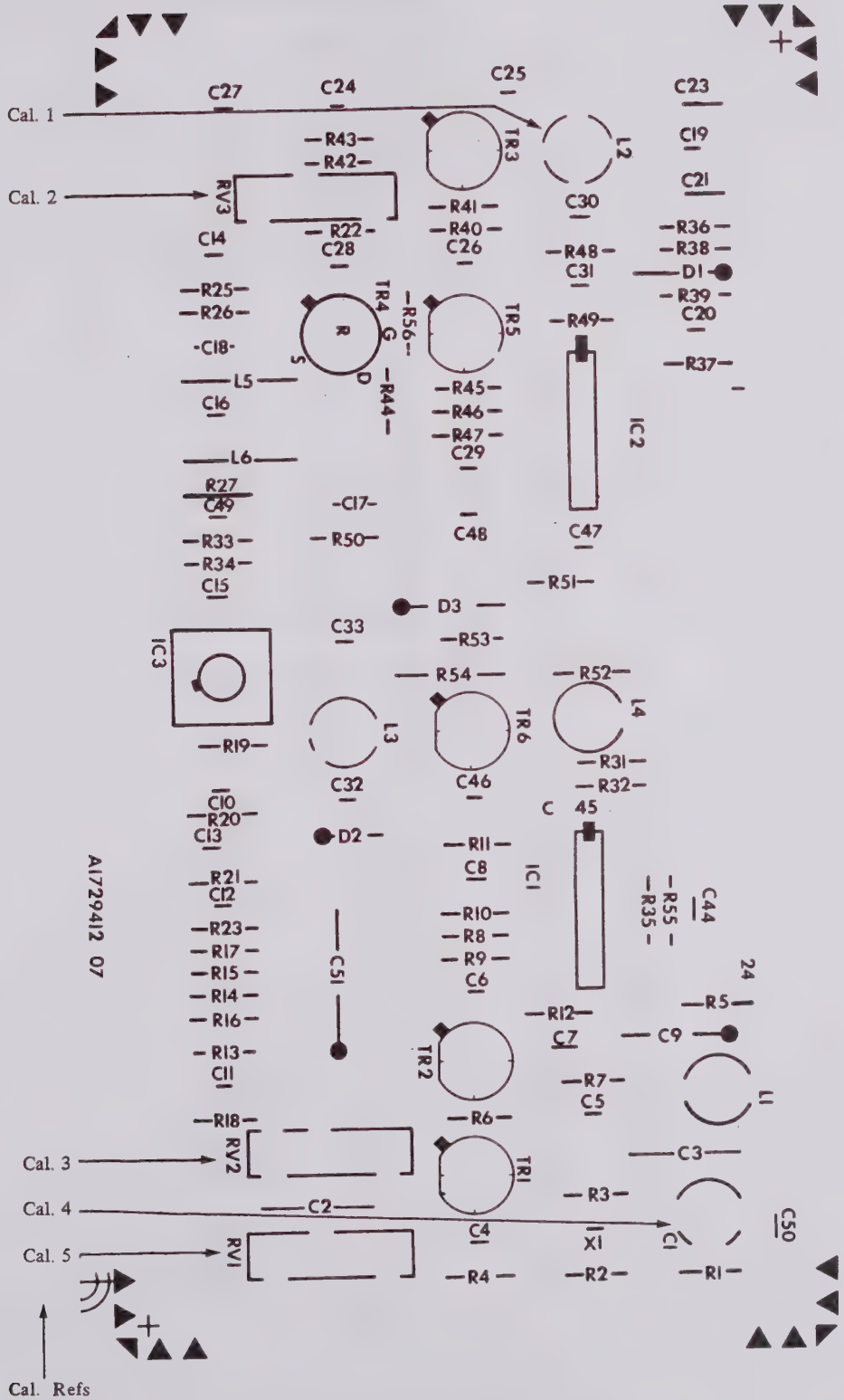
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1172 PCB No. 12 OSC. MIXER

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	L2	1/GCE	12.0.6 16.1.5	Sets VCO input.
2	RV3	1/GCE	12.0.5 16.1.5	Part of VCO set-up.
3	RV2	1/GCB	12.0.8	Mixer set-up.
4	C1	1/GCA	12.0.4 16.1.3	10MHz oscillator set-up.
5	RV1	1/GCA	12.0.3 12.1.2 12.1.3 16.1.2	10MHz oscillator set-up.

COMPONENT LAYOUT, 1172 PCB No. 12



Calibration information is given in Section 3.

Printed Circuit Board A1729113

(Phase Detector)

Cct Ref.	General Description				Solartron Part No.
R2	MEOX	3.9k	1/4W	5%	195633900
R3	MEOX	4.7k	1/4W	5%	195634700
R4	CACP	10k	1/8W	10%	172041000
R5	CACP	10k	1/8W	10%	172041000
R6	CACP	470	1/8W	10%	172024700
R7	CACP	4.7k	1/8W	10%	172034700
R8	CACP	470	1/8W	10%	172024700
R9	CACP	10k	1/8W	10%	172041000
R10	CACP	100k	1/8W	10%	172051000
R13	CACP	470	1/8W	10%	172024700
R14	CACP	4.7k	1/8W	10%	172034700
R15	CACP	470	1/8W	10%	172024700
R16	CACP	10k	1/8W	10%	172041000
R20	CACP	47	1/8W	10%	172014700
R21	CACP	47	1/8W	10%	172014700
R23	CACP	1.2k	1/8W	10%	172031200
R24	CACP	1.2k	1/8W	10%	172031200
R25	CACP	100k	1/8W	10%	172051000
R26	CACP	10k	1/8W	10%	172041000
R27	CACP	10k	1/8W	10%	172041000
C1	ESTM	0.33	100V	10%	225453300
C2	ESTM	0.68	100V	10%	225456800
C3	CERM	22p	500V	20%	241312200
C4	CERM	0.01	25V	+50% -25%	241941000
C5	CERM	22p	500V	20%	241312200
C6	CERM	1000p	500V	20%	241331000
C8	CERM	0.047	25V	+50% -25%	241944700
C9	CERM	0.047	25V	+50% -25%	241944700
C10	CERM	0.047	25V	+50% -25%	241944700
D1	SD3				300522160
D2	SD3				300522160
D3	SD3				300522160
D4	SD3				300522160
D5	SD3				300522160
D6	SD3				300522160
D7	SD3				300522160
D8	SD3				300522160
D9	SD3				300522160
D10	SD3				300522160
D11	Zener				300521320
D12	SD3				300522160
D13	SD3				300522160
D14	Zener				300522540
TR1	BC107				300553320
TR2	BC107				300553320
TR3	BC107				300553320
TR4	BCY 70				300553590
TR5	BCY 70				300553590
TR6	U 1897 E				300553800
TR7	U 1897 E				300553800
TR9	2 N 3053				300551800
IC1	741				510000591
IC2	LF356				510090440
RV1	CMPM	5k	1/2W	10%	130635000

EDGE CONNECTORS – 1172, PCB No. 13

E.C. No.	INTERCONNECTION LIST DETAILS No.	SIGNAL TITLE	REMARKS
1AB	503	START RAMP	
2A	168	FREQ. CONTROL VOLTAGE GROUND	
3A	167	FREQ. CONTROL VOLTAGE HI	
7A	629	+18V	
9A	597	+5V	
11AB	632	0V	
12AB	632	0V	
15AB	628	—16V	
19AB	452	SAMPLE RAMP	
22AB	211	HOLD RAMP	

CALIBRATION POINTS

This board includes variable components which may require adjustment after the circuit has been disturbed.

The decision as to whether or not an adjustment is necessary will depend upon the extent of disturbance caused by the rectification or other work that has been carried out. If doubt exists the circuit diagram should be consulted for assistance. The third column of the following list indicates the appropriate circuit and functional block.

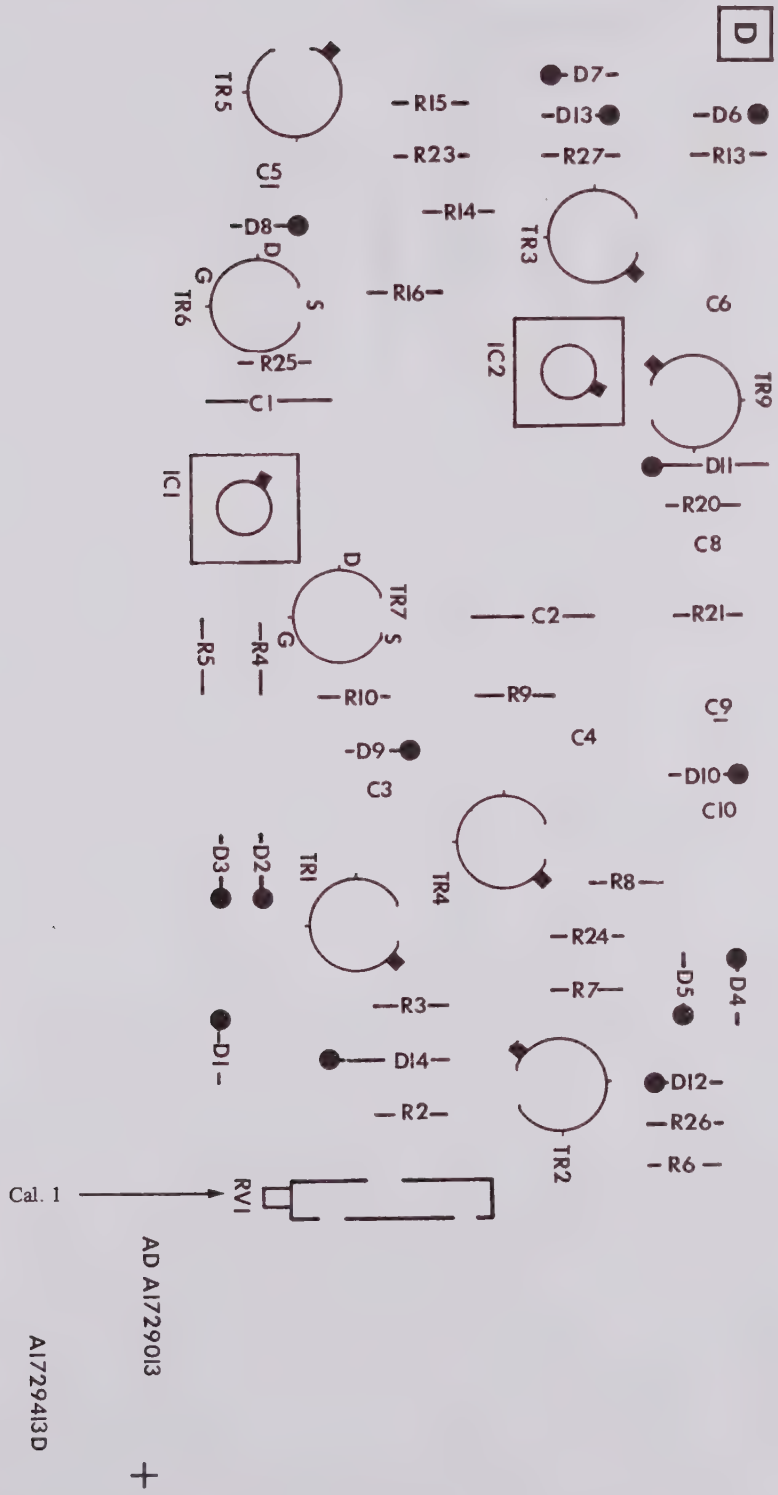
If adjustment is found to be necessary great care must be taken before attempting to alter any setting. In most cases it is not possible to carry out any adjustments without observing the complete procedure as detailed in the Production Test Specification. This document is part of the set of Special Test Equipment available for servicing the instrument. The particular procedures applicable to each variable component are listed in the fourth column of the list. The numbers refer to paragraphs of the Production Test Specification.

It is emphasised that if adjustment is attempted without observing the correct procedure or using the correct test equipment the instrument may be damaged or may not subsequently operate within its specification.

1172 PCB No. 13 PHASE DETECTOR

Cal. No.	Compo-nent No.	Circuit Diag. No.	Calibration procedures	Brief description of purpose.
1	RV1	5/GCO		Ramp generator set-up.

COMPONENT LAYOUT, 1172 PCB No. 13



Calibration information is given in Section 3.

PARTS LIST, 1172 PCB No. 14

Printed Circuit Board A1729114

(Relay Switches)

Cct. Ref.	General Description				Solartron Part No.
R1	CACP	100	1/8W	10%	172021000
R2	CACP	100	1/8W	10%	172021000
R3	CACP	100	1/8W	10%	172021000
R4	CACP	100	1/8W	10%	172021000
R5	CACP	100	1/8W	10%	172021000
R6	CACP	100	1/8W	10%	172021000
R7	CACP	100	1/8W	10%	172021000
R8	CACP	100	1/8W	10%	172021000
R9	MEOX	10k	1/4W	5%	195641000
R10	CACP	2200	1/8W	10%	172032200
C1	ESTM	1000p	400	10%	222331000

COMPONENT LAYOUT, 1172 PCB No. 14

PARTS LIST, 1172 PCB No. 15

Printed Circuit Board A1729115

(Relay Timing)

Cct Ref.	General Description				Solartron Part No.
R1	MEOX	220	1/4W	5%	195622200
R2	MEOX	220	1/4W	5%	195622200
R3	MEOX	220	1/4W	5%	195622200
R4	MEOX	220	1/4W	5%	195622200
R5	MEOX	220	1/4W	5%	195622200
R6	MEOX	220	1/4W	5%	195622200
R7	MEOX	220	1/4W	5%	195622200
C1	CERM	0.047	25V	-20% +10%	241944700
C2	CERM	0.047	25V	-20% +10%	241944700
D1	SD3				300522160
D2	SD3				300522160
D3	SD3				300522160
D4	SD3				300522160
D5	SD3				300522160
D6	SD3				300522160
D7	SD3				300522160
IC1	7400				510000340
IC2	7400				510000340
IC3	7490				510000280
IC4	7442				510000330
IC5	7400				510000340
IC6	7400				510000340
IC7	7406				510000760
IC8	7406				510000760

COMPONENT LAYOUT, 1172 PCB No. 15

PARTS LIST, 1172 PCB No. 16

Printed Circuit Board A1729116

(Front Panel Control)

Cct Ref.	General Description		Solartron Part No.
R1	CACP	1k	172031000
R2	CACP	1k	172031000
R3	CACP	1k	172031000
R4	CACP	1k	172031000
R5	CACP	1k	172031000
R6	CACP	1k	172031000
R7	CACP	1k	172031000
R8	CACP	1k	172031000
R9	CACP	1k	172031000
R10	CACP	1k	172031000
R11	CACP	1k	172031000
R12	CACP	680	172026800
R13	CACP	1k	172031000
R14	CACP	680	172026800
R15	CACP	680	172026800
R16	CACP	1k	172031000
R17	CACP	1k	172031000
R18	CACP	1k	172031000
R19	CACP	Adjust On Test	172031000
R20	CACP	1k	172031000
R21	CACP	680	172026800
R22	CACP	680	172026800
R23	CACP	680	172026800
R24	CACP	100k	172051000
R25	CACP	3.9k	172033900
R26	CACP	680	172026800
R27	CACP	680	172026800
R28	CACP	680	172026800
R29	CACP	100k	172051000
R30	CACP	470	172024700
R32	CACP	1k	172031000
R33	CACP	1k	172031000
R34	CACP	1k	172031000
R35	CACP	1k	172031000
R36	CACP	1k	172031000
C1	ALME	10	270771000
C2	TAND	10	265871000
C4	TAND	10	265871000
C5	CERM	0.047	241944700
C6	CERM	0.047	241944700
C7	CERM	0.047	241944700
C8	CERM	0.047	241944700
C9	CERM	0.047	241944700
C10	TAND	10	265871000
C11	TAND	10	265871000
C12	CERM	0.047	241944700
C13	CERM	0.047	241944700
C14	CERM	0.047	241944700
C15	CERM	0.047	241944700
C16	CERM	0.047	241944700
C17	CERM	0.047	241944700
C18	CERM	0.047	241944700
C19	CERM	0.047	241944700
D1	SD3		300522160
D2	SD3		300522160
D3	SD3		300522160
D4	SD3		300522160
D5	SD3		300522160
D6	SD3		300522160
D7	SD3		300522160
D8	SD3		300522160
D9	SD3		300522160
D10	SD3		300522160
D11	SD3		300522160

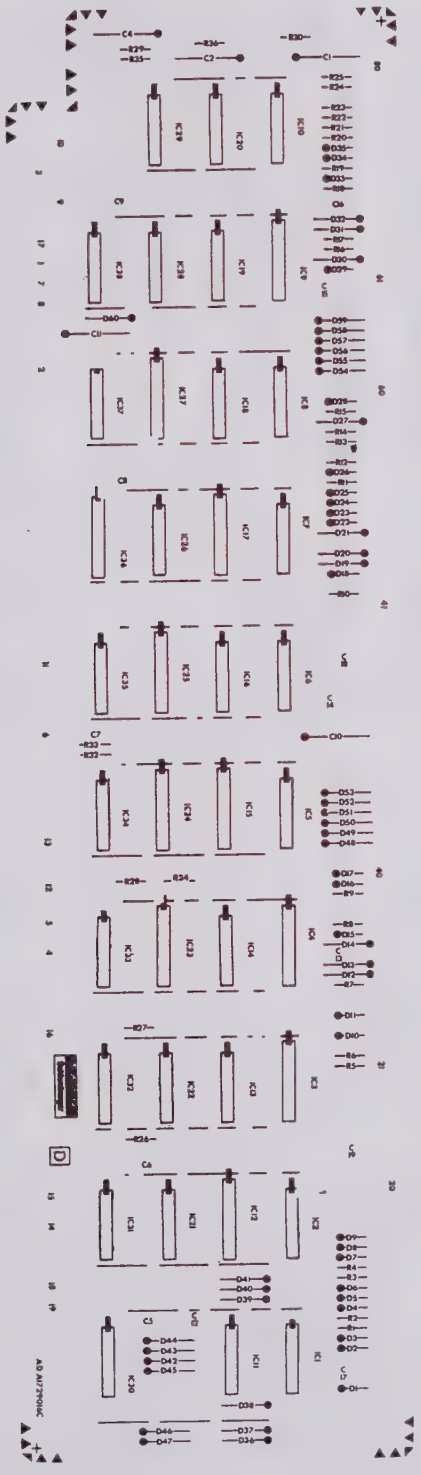
PARTS LIST, 1172 PCB No. 16

Cct Ref.	General Description	Solartron Part No.
D12	51v Zener	300521310
D13	51v Zener	300521310
D14	51v Zener	300521310
D15	SD3	300522160
D16	SD3	300522160
D17	SD3	300522160
D18	SD3	300522160
D19	5.1v Zener	300521310
D20	5.1v Zener	300521310
D21	5.1v Zener	300521310
D22	SD3	300522160
D23	SD3	300522160
D24	SD3	300522160
D25	SD3	300522160
D26	SD3	300522160
D27	5.1v Zener	300521310
D28	SD3	300522160
D29	SD3	300522160
D30	5.1v Zener	300521310
D31	5.1v Zener	300521310
D32	5.1v Zener	300521310
D33	SD3	300522160
D34	SD3	300522160
D35	SD3	300522160
D36	5.1v Zener	300521310
D37	5.1v Zener	300521310
D38	5.1v Zener	300521310
D39	5.1v Zener	300521310
D40	5.1v Zener	300521310
D41	5.1v Zener	300521310
D42	5.1v Zener	300521310
D43	5.1v Zener	300521310
D44	5.1v Zener	300521310
D45	5.1v Zener	300521310
D46	5.1v Zener	300521310
D47	5.1v Zener	300521310
D48	5.1v Zener	300521310
D49	5.1v Zener	300521310
D50	5.1v Zener	300521310
D51	5.1v Zener	300521310
D52	5.1v Zener	300521310
D53	5.1v Zener	300521310
D54	5.1v Zener	300521310
D55	5.1v Zener	300521310
D56	5.1v Zener	300521310
D57	5.1v Zener	300521310
D58	5.1v Zener	300521310
D59	5.1v Zener	300521310
D60	5.1v Zener	300521310
IC1	SN 7407 N	510000750
IC2	SN 7404 N	510000410
IC3	SN 7415 IN	510000850
IC4	SN 7475 N	510000350
IC5	SN 7406 N	510000760
IC6	SN 7474 N	510000490
IC7	SN 74137	510001530
IC8	SN 7407 N	510000750
IC9	SN 7475 N	510000350
IC10	SN 7404 N	510000410
IC11	SN 7400 N	510000340
IC12	SN 7475 N	510000350
IC13	SN 7410 N	510000420
IC14	SN 7404 N	510000410
IC15	SN 74155	510001260
IC16	SN 7400 N	510000340
IC17	SN 7415 IN	510000850
IC18	SN 7400 N	510000340
IC19	SN 7400 N	510000340
IC20	SN 7406 N	510000760
IC21	SN 7400 N	510000340
IC22	SN 15862 N	510000200
IC23	SN 74191	510000940

PARTS LIST, 1172 PCB No. 16

Cct. Ref.	General Description	Solartron Part No.
IC24	SN 74191	510000940
IC25	SN 74155	510001260
IC26	SN 7406 N	510000760
IC27	SN 7475	510000350
IC28	SN 7407 N	510000750
IC29	SN 7413 N	510000710
IC30	SN 7407 N	510000750
IC31	SN 7400 N	510000340
IC32	SN 7401 N	510000400
IC33	SN 7404 N	510000410
IC34	SN 7401 N	510000400
IC35	SN 7474 N	510000490
IC36	SN 7475 N	510000350
IC37	SN 7474 N	510000490
IC38	SN 7474 N	510000490

COMPONENT LAYOUT, 1172 PCB No. 16

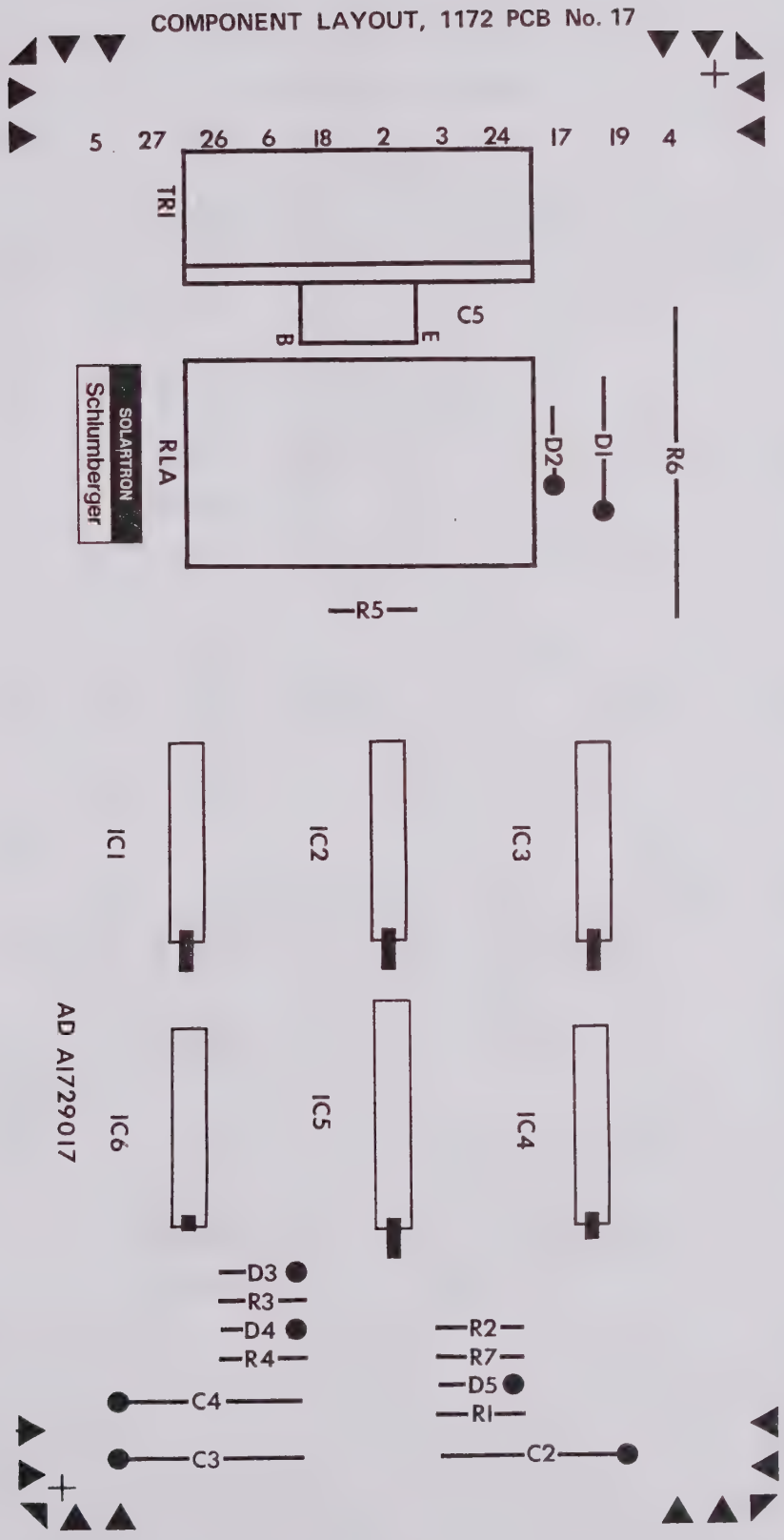


PARTS LIST, 1172 PCB No. 17

Printed Circuit Board A1729117

(Front Panel Relay)

Cct. Ref.	General Description				Solartron Part No.
R1	CACP	1k	1/8W	10%	172031000
R2	CACP	100			172021000
R3	CACP	47k			172044700
R4	CACP	39k			172043900
R5	CACP	680			172026800
R6	POWW	3.3	3W	5%	173703300
R7	CACP	100k	1/8W	10%	172051000
C1	CERM	1000p			241331000
C2	TAND	15	20V	20%	265871500
C3	TAND	10			265871000
C4	TAND	10			265871000
C5	CERM	0.047			241944700
D1	Zenner 4.3V				300523900
D2	SD3				300522160
D3	SD3				300522160
D4	SD3				300522160
D5	SD3				300522160
TR1	TIP 31				300554010
IC1	MIC 74132				510003220
IC2	SN 7406 N				510000760
IC3	DTL 946				510000160
IC4	SN 7413 N				510000710
IC5	SN 74123 N				510000980
IC6	SN 7474 N				510000490
RL1	RELAY PC2/HD/CAB 12				300650660


COMPONENT LAYOUT, 1172 PCB No. 17
5 27 26 6 18 2 3 24 17 19 4
TR1
C5
B
E
SOLARTRON
Schlumberger
RLA
D2
D1
R6
R5
IC1
IC2
IC3
IC6
IC5
IC4
AD AI729017
D3
R3
D4
R4
C4
C3
R2
R7
D5
R1
C2

PARTS LIST 1170 PCB 51

Printed Circuit Board 11709051

Cct Ref.	General Description				Solartron Part No.
R1	CACP	100	1/4W	10%	172021000
R2	CACP	680	1/4W	10%	172026800
R3	CACP	2.2k	1/4W	10%	172032200
R4 to R10	CACP	4.7k	1/4W	10%	172034700
C1	CERM	100p	500V	20%	241321000
C2	CERM	100p	500V	20%	241321000
C3	CERM	7 - 35p	160V	−10% +70%	290020350
C4	CERM	150p	500V	20%	241321500
C5	TAND	33	10V	20%	265473300
C6 to C16	CERM	.047	25V	+50% −25%	241944700
IC1 to IC5	74LS175				510003170
IC6 to IC15	74LS283				510004220
IC16 to IC19	74LS174				510002970
IC20	7437				510003200
IC21	74LS42				510002710
IC22	74LS74				510002600
IC23	74LS10				510002870
IC24	74LS04				510002690
IC25	74LS00				510002000
IC26	74LS393				510004470
IC27	74LS74				510002600
IC28 to IC31	74LS390				510004410
IC32	7407				510000410
IC33	74LS74				510002600
IC34	7475				510000350
X1	10MHz Crystal				300810200

COMPONENT LAYOUT, 1170 PCB No. 51

2.4 Interconnection List

The following pages form a classified list of interconnections between the printed circuit boards and between the various modules of the 1170 system. Used in conjunction with the circuit diagrams, it will quickly enable the reader to find the sources and destinations of the signals available at each edge connector.

The list is arranged in alphabetical order of the first letter of the signal name and each connection is allocated a number. Sheet numbers follow the same system, the prefix letter indicating the title capital letter. An index is printed at the end of this introduction.

Using the list

If the circuit diagrams are examined it will be seen that each edge connector is annotated with a signal name and a number in parentheses. Reference to each particular connection in the list will reveal all other connections common to that signal.

List Arrangement

The list is arranged in numerical order and grouped so that signal names with common initial letters appear on sheets with the same prefix letter in the sheet number. Signals with a title beginning with a number are found in sheets NUM 1, 2, etc. The list ends with a group of unallocated connections on pages U/C 1, 2 etc. These contain connections not used at the time of printing but which may be used for subsequent modifications.

The location of the terminals are arranged in columns under the headings 1170, 1172, and OTHERS. This arrangement allows quick identification of the major area of location. The 1170 column includes those boards that plug into the 1170 mother board (pcb 25) and the plugs and sockets that are connected to it. The 1172 column includes those boards that plug into the mother board (pcb 1) and includes those installed in the 1177 and other generator units. The OTHERS column includes power supply module boards, front panel boards and relay unit boards, even though they may be part of the 1170 or 1172.

Abbreviations

Edge connections listed in the location columns are abbreviated to the form X - YAB where X is the pcb number, Y the edge connector and A or B the side of the board. (B is the component side).

It should be noted that the pcb numbers quoted in the list (X in the above explanation) refer to the position of the board and not necessarily to the pcb number. For instance, a reference to pcb No 6 refers to position No 6, where in fact the board in that position is a pcb No 5.

The abbreviations in the ★ columns refer to the function of the connection, S meaning that that is the source of the signal and D its destination.

Contents

Sig. No.	Sheet
1 - 27	A1 - A2
30 - 52	B1
61 - 88	C1 - C3
90 - 132	D1 - D3
135 - 149	E1 - E2
160 - 174	F1 - F2
183 - 198	G1
210 - 213	H1
230 - 260	I1 - I3
264 - 289	K1 - K2
290 - 319	L1 - L4
320 - 348	M1 - M5
349	N1
350 - 365	01
384 - 393	P1
402 - 448	R1 - R4
450 - 510	S1 - S5
521 - 547	T1 - T3
550 - 551	U1
553 - 555	V1
560 - 563	W1
570 - 577	XYZ1
590 - 632	NUM 1 - NUM 6
640 - 689	U/C1 - U/C 4

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
1	ATEN	7 - 40B 8 - 40AB 9 - 40AB	S N N				
2	A $\overline{1}$	5 - 48B 6 - 48A	S D				
3	A $\overline{2}$	5 - 43B 6 - 43A	S D				
4	A $\overline{4}$	5 - 38B 6 - 38A	S D				
5	A $\overline{8}$	5 - 33B 6 - 33A	S D				
6	A/1000 $\overline{1}$	5 - 49B 6 - 49A	S D				
7	A/1000 $\overline{2}$	5 - 44B 6 - 44A	S D				
8	A/1000 $\overline{4}$	5 - 39B 6 - 39A	S D				
9	A/1000 $\overline{8}$	5 - 34B 6 - 34A	S D				
10	$\overline{\text{AUTORANGE OVERLOAD}}$	2 - 26A 10 - 26AB 11 - 26A 17 - 32A	D N D S				
11	ADD A CMD	5 - 17A 6 - 17B 7 - 17AB 8 - 17AB 9 - 17AB	D D S N N				
12	ADD B CMD	5 - 17B 6 - 17A 7 - 16AB 8 - 16AB 9 - 16AB	D D S N N				
13	$\overline{\text{ADD BIAS POLARITY STROBE}}$	13 - 47A Disc 46 Disc 26 1 - 49AB	S D				
14	ADD BIAS (F)			5 - 19A 10 - 16A	D S		

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	★	1172	★	OTHERS	★
15	ADD BIAS (C)			10 - 6A 11 - 18A	D S		
16	ADD BIAS	14 - 14A Disc 49 SK J B12 SK J D12	S	11 - 9B Disc 23 PL J B12	D	Front Panel Control PCB 16- Pin 12 PL J D12	D
17	$\overline{\text{AUTORANGE LATCH READ STROBE}}$	14 - 4B 17 - 4A	S D				
18	ADD BIAS DRIVE			5 - 15AB 6 - 17AB 7 - 16A	S N D		
19	ARITH COND 1	7 - 3B 11 - 4B	S D				
20	ARITH COND 2	7 - 38B 8 - 38AB 9 - 38AB 10 - 38AB 11 - 38A	S N N N D				
21	ADD BIAS POLARITY (F)			10 - 12A 5 - 21A	S D		
22	ABN CARRY A	4 - 16B 5 - 16A	D S				
23	ABN CARRY B	4 - 17B 6 - 16A	D S				
24	ADD BIAS +VE VOLTS			2 - 8AB 4 - 17B 5 - 17A	S N D		
25	ADD BIAS -VE VOLTS			2 - 7AB 5 - 18AB	S D		
26	$\overline{\text{ADD BIAS POLARITY}}$	1 - 48AB Disc 25 SK J B8	S	11 - 19B Disc 19 PL J B8	D		
27	ADD BIAS POLARITY			10 - 5B 11 - 19A	D S		

★ S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
30	BTEN	7 - 39B 8 - 39AB 9 - 39AB	S N N				
31	B $\overline{1}$	5 - 48A 6 - 48B	D S				
32	B $\overline{2}$	5 - 43A 6 - 43B	D S				
33	B $\overline{4}$	5 - 38A 6 - 38B	D S				
34	B $\overline{8}$	5 - 33A 6 - 33B	D S				
35	B/1000 $\overline{1}$	5 - 49A 6 - 49B 6 - 50B	D S D				
36	B/1000 $\overline{2}$	5 - 44A 6 - 44B 6 - 45B	D S D				
37	B/1000 $\overline{4}$	5 - 39A 6 - 39B 6 - 40B	D S D				
38	B/1000 $\overline{8}$	5 - 34A 6 - 34B 6 - 35B	D S D				
47	BIAS OVERLOAD (F)			7 - 8AB 10 - 10A	S D		
50	BIAS RANGE A	11 - 52B 23 - 29A	S D				
51	BIAS RANGE B	11 - 51A 23 - 30A	S D				
52	$\overline{\text{BUSY}}$	4 - 5AB 7 - 5B 8 - 5AB 9 - 5AB 10 - 5AB 11 - 5A	S D D N N D				

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
61	$\overline{\text{CORRELATOR CARRIER MARK - SPACE}}$	22 - 22AB 23 - 22AB	S D				
62	CORRELATOR CARRIER MARK - SPACE	22 - 23AB 23 - 23AB	S D				
63	CARRIER POLARITY	3 - 26B 22 - 4A	D S				
64	$\overline{\text{CLEAR}}$	5 - 5A 6 - 5A 7 - 6B 8 - 6AB 9 - 6AB	D D S N N				
65	$\overline{\text{CLEAR PULSE}}$	15 - 3B 16 - 3A	S D				
66	CHOP	3 - 56AB 24 - 26A	S D				
67	CORRELATOR CLOCK	3 - 5AB Disc 31 Disc 98 18 - 7A 19 - 7B 20 - 7A 21 - 7B	E E E E E				
68	$\overline{\text{CHANGE FREQ.}}$	11 - 34B 15 - 32A Disc 40 Disc 196 SK J C14 19 - 38A 20 - 38B 21 - 38A	S D D D D				
69	$\overline{\text{COMPUTE}}$	11 - 5B 16 - 26A 18 - 17AB 19 - 17AB 20 - 17A 21 - 17B	S D D D D D				
70	$\overline{\text{CONDITION ENABLE}}$	10 - 33B 11 - 33A	S D				
71	CONDITION RETURN	10 - 34B 11 - 34A	D S				
72	COS $\overline{\text{I}}$	3 - 51A 6 - 51AB	S D				

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
73	COS $\overline{2}$	3 - 46A 6 - 46AB	S D				
74	COS $\overline{4}$	3 - 41A 6 - 41AB	S D				
75	COS $\overline{8}$	3 - 36A 6 - 36AB	S D				
76	COS $\overline{10}$	3 - 50A 6 - 50A	S D				
77	COS $\overline{20}$	3 - 45A 6 - 45A	S D				
78	COS $\overline{40}$	3 - 40A 6 - 40A	S D				
79	COS $\overline{80}$	3 - 35A 6 - 35A	S D				
80	$\overline{\text{CPO}}$	4 - 14AB 5 - 14AB 6 - 14AB	S D D				
81	$\overline{\text{COMMAND DELAY}}$	7 - 38A 11 - 38B	D S				
82	CORRELATOR 10V REF	23 - 4A 24 - 6A	S D				
83	CORRELATOR 10.6V REF	23 - 5A 24 - 7A	S D				
84	CORRELATOR -15V	23 - 10A 24 - 12A Disc 112 SK L 21				Power Supply Board PCB 26 PL L 21	
85	CORRELATOR -10V	23 - 11A 24 - 13A Disc 113 SK L 22				Power Supply Board PCB 26 PL L 22	
86	CORRELATOR 0V	23 - 12A 24 - 14A Disc 114 SK L 20 SK L 24				Power Supply Board PCB 26 PL L 20 PL L 24	
87	CORRELATOR +15V	23 - 13A 24 - 15A Disc 115 SK L 23				Power Supply Board PCB 26 PL L 23	

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
88	COMMON OV (F)			8 - 23 AB Disc 53		Front Panel Common Output	

* S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
90	$\overline{\text{D/A ADD BIAS ENABLE}}$	13 - 19A 17 - 17B	S D				
91	D/A RESET	17 - 23B 18 - 23AB 19 - 23A 20 - 23A 21 - 23A Disc -93 SK J B1	S D D D D	11 - 2B Disc 29 PLJ B1	D		
92	D/A LATCH STROBE	13 - 24A 17 - 24A	S D				
93	$\overline{\text{D/A LOG F ENABLE}}$	13 - 12B 16 - 12B 17 - 11A	S N D				
94	$\overline{\text{D/A LH DISPLAY ENABLE}}$	13 - 14B 17 - 13A	S D				
95	$\overline{\text{D/A RH DISPLAY ENABLE}}$	13 - 13B 17 - 12A	S D				
96	D/A MARK-SPACE	17 - 24B 18 - 24AB 19 - 24AB 20 - 24A	S D D D				
97	DELAY/$\overline{\text{INT}}$	2 - 7B 7 - 8A 9 - 8A	D S N				
99	$\overline{\text{D - A O/P VOLTS ENABLE}}$	13 - 18A 17 - 18A	S D				
100	$\overline{\text{D - A REJ BIAS ENABLE}}$	13 - 20A 17 - 18B	S D				
101	D - A SAMPLE LOG F	17 - 38B 18 - 38AB 19 - 38B 20 - 38A 21 - 38B	S N D D D				
102	D - A SAMPLE LH DISPLAY	17 - 36B 18 - 36AB 19 - 36AB 20 - 36AB 21 - 36AB	S D D D N				

* S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
103	D - A SAMPLE RH DISPLAY	17 - 37B 18 - 37AB 19 - 37AB 20 - 37AB 21 - 37AB	S D N D D				
114	DEC 6	5 - 10AB 6 - 10AB 7 - 10A	D D S				
115	$\overline{\text{DEC 6}}.\overline{\text{DEC 7}}$	5 - 11AB 6 - 11AB 7 - 11A	D D S				
116	$\overline{\text{DEC 9 ZERO A}}$	5 - 5B 7 - 4A	S D				
117	$\overline{\text{DEC 9 ZERO B}}$	6 - 5B 7 - 5A	S D				
118	DECADE 1	4 - 4B 5 - 4AB 6 - 4AB 7 - 4B 8 - 4AB 9 - 4AB 10 - 4AB 11 - 4A	D N N D D N N S				
119	DECADE 2	4 - 3B 5 - 3AB 6 - 3AB 7 - 3A 8 - 3AB 9 - 3AB 10 - 3AB 11 - 3A	D N N D D N N S				
120	DECADE 4	4 - 2B 5 - 2AB 6 - 2AB 7 - 2AB 8 - 2AB 9 - 2AB 10 - 2AB 11 - 2A	D N N D D N N S				
121	$\overline{\text{DEC POINT}}$	15 - 2B 16 - 2A	S D				

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
122	$\overline{\text{DISABLE DISPLAY}}$	14 - 17B 15 - 17AB 16 - 17A 16 - 18B 17 - 17A Disc 118	S N N N D				
123	DECSH CMD.	7 - 7B 9 - 7B	D N				
124	$\overline{\text{DECSH}}$	5 - 6AB 6 - 6AB 7 - 6A	D D S				
125	DEMOD	22 - 19AB 14 - 32A 23 - 19AB 3 - 26A	D S D D				
127	DISPLAY LOG	13 - 19B 14 - 19AB 15 - 19AB 16 - 19AB 17 - 19AB 18 - 19AB 19 - 19AB 20 - 19A 21 - 19B	D S N D N D D D D				
128	DISPLAY CARTES	13 - 20B 14 - 20AB 15 - 20AB 16 - 20AB 17 - 20AB 18 - 20AB 19 - 20A 20 - 20A 21 - 20A Disc 117 SK N 18	D S N D N D D D D			Display Board PCB 30 PL N 18	
129	D/A RESET (F)			2 - 20AB T6 Pin 6	D S		
130	$\overline{\text{D/A RESET (F)}}$			2 - 19AB T6 Pin 2	D S		
131	$\overline{\text{D/A RESET}}$			11 - 9A T6 PIN 1	S D		
132	$\overline{\text{D/A RESET RETURN}}$			11 - 10A T6 PIN 5	S D		

* S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
135	ENABLE A	5 - 12B 7 - 12A 10 - 13A	D D S				
136	ENABLE B	6 - 12B 7 - 12A 10 - 12A	D D S				
137	ENABLE C	7 - 11B 8 - 11AB 9 - 11AB 10 - 11A	D D N S				
138	ENABLE STORE	10 - 11B 11 - 11A	S D				
139	$\overline{\text{ENTER PULSE}}$	12 - 5AB Disc 42 Disc 41 15 - 5B 16 - 5A	D S D				
140	$\overline{\text{END OF ENTER}}$	12 - 52A 15 - 43A	D S				
141	$\overline{\text{ENTER BISTABLE}}$	15 - 33B 16 - 33A	S D				
142	$\overline{\text{ENTER O/P VOLTS}}$	11 - 36B 12 - 32B	D S				
143	$\overline{\text{ENTER FREQ.}}$	11 - 35B 12 - 32A Disc 159	D S				
144	EOT	2 - 43AB 3 - 43AB 4 - 43AB	S N D				
146	EXPONENT ENTER ENABLE	15 - 36B 16 - 36A	S D				
147	$\overline{\text{EXT GEN CLOCK}}$	2 - 6A Disc 5 Disc 103 18 - 6A 19 - 6A 20 - 6A 21 - 6A	D S S S S				
148	ENABLE DECODE	7 - 33B 8 - 33AB 9 - 33AB	D N N				

* S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
149	$\overline{\text{EXT SYNC}}$	2 - 6B	D				
		Disc 32					
		Disc 99					
		18 - 9B	S				
		19 - 9B	S				
		20 - 9B	S				
		21 - 9B	S				

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
160	FLAG	7 - 34A Disc 158 Disc 122 18 - 47B 19 - 47B 20 - 47B 21 - 47B	D S S S S				
161	$\overline{\text{FORCED REMOTE}}$	14 - 35B 18 - 34AB 19 - 34AB 20 - 34AB 21 - 34AB	D S S S				
162	$\overline{\text{FORCE HET}}$	3 - 3A Disc 210 Disc 170 18 - 2B 19 - 2A	D S S				
163	$\overline{\text{FORCE MOD}}$	14 - 12A Disc 166 Disc 208 22 - 7AB	D S				
164	F. P. SERIAL O/P	14 - 35A Disc 54 SK J D4	D			Front Panel Relay Board PCB 17 Pin 24 PL J D4	S
165	F. P. SERIAL O/P	14 - 33A 18 - 32A 19 - 32B 20 - 32AB 21 - 32AB	 E E E E				
166	$\overline{\text{FREQ.}}$(KEYBOARD)	12 - 38A 15 - 35A Disc 160 Disc 176 18 - 43B 19 - 43A	D S D D				
167	FREQ. CONTROL VOLTAGE HI			12 - 3AB 13 - 3A	D S		
168	FREQ. CONTROL VOLTAGE GROUND			12 - 2AB 13 - 2A	D S		
169	$\overline{\text{FREQ. EXP. STROBE}}$	2 - 26B 13 - 26A 18 - 26B	D S D				

Continued SH F2

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
169 Cont.	$\overline{\text{FREQ. EXP. STROBE}}$	19 - 26B 20 - 26B 21 - 26B	D D D				
170	$\overline{\text{FREQ. STROBE}}$	1 - 33AB 13 - 32A Disc 164 Disc 195 20 - 33B 21 - 33AB	D S D D				
171	FREQ. RANGE 1	14 - 13B 15 - 13AB 16 - 13A Disc 63	S N D				
172	FREQ. RANGE 2	14 - 12B 15 - 12AB 16 - 12A Disc 62	S N D				
173	$\overline{\text{FREQ. RANGE TOUCH KEY PULSE}}$	14 - 14B 15 - 14AB 16 - 14A	S N D				
174	$\overline{\text{FRONT PANEL SYNC}}$	17 - 12B Disc 84 SK J D5	S			Front Panel Control PCB 16 Pin 5 PCB 17 Pin 5 PL J D5	 D D

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	★	1172	★	OTHERS	★
183	GATED KEYBOARD EQUIV.	13 - 48A 15 - 46A	S D				
184	$\overline{GO}$	4 - 2A 11 - 3B	D S				
185	GENERATOR CLOCK	2 - 8B 3 - 8AB Disc 33 SK J A9	S D	11 - 10B Disc 24 PL J A9	D		
186	GENERATOR D/A MARK-SPACE	17 - 32B Disc 87 SK J B6	S	T9 Pin 1 Disc 34 PL J B6	D		
187	$\overline{\text{GENERATOR D/A MARK-SPACE}}$	17 - 34B Disc 88 SK J B5	S	T9 Pin 5 Disc 33 PL J B5	D		
188	$\overline{\text{GENERATOR CARRIER M/S}}$	22 - 15AB Disc 109 SK J B16	S	T8 Pin 1 Disc 32 PL J B16	D		
189	GENERATOR CARRIER M/S	22 - 16AB Disc 110 SK J B17	S	T8 Pin 5 Disc 31 PL J B17	D		
190	$\overline{\text{GENERATOR CLOCK}}$			11 - 7B T7 Pin 5	S D		
191	GENERATOR CARRIER M/S (F)			T8 Pin 6 5 - 5AB	S D		
192	$\overline{\text{GENERATOR CARRIER M/S (F)}}$			T8 Pin 2 5 - 6AB	S D		
193	GENERATOR D/A MARK-SPACE (F)			T9 Pin 2 2 - 17AB	S D		
194	$\overline{\text{GENERATOR D/A MARK-SPACE (F)}}$			T9 Pin 6 2 - 18AB	S D		
195	$\overline{\text{GENERATOR CLOCK RETURN}}$			T7 Pin 1 11 - 8B	S N		
196	GENERATOR CLOCK (F)			T7 Pin 2 3 - 6A	S D		
197	$\overline{\text{GENERATOR CLOCK (F)}}$			T7 Pin 6 3 - 5A	S D		
198	GENERATOR 10.6V REF			2 - 11A 4 - 6AB 5 - 7AB 6 - 6AB	D S N D		

★ S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
210	$\overline{\text{HET ON}}$	2 – 55B 3 – 55AB 23 – 32AB Disc 214 Disc 179 18 – 50B 19 – 50A Disc 198 20 – 43B	S D D D D				
211	HOLD RAMP	1 - 35AB Disc 18 SK J A8	S	13 - 22AB Disc 1 PL J A8	D		
212	"HIGH"	14 - 1B 15 - 1A 16 - 1A	S D D				
213	$\overline{\text{Hz NEON}}$	16 - 10B Disc 73 SK N 24	S			Display Board PCB 30 PL N 24	D

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
230	INC STORE DECADE	10 - 35B 11 - 35A	S D				
231	INC ARITH DECADE	10 - 36B 11 - 36A	S D				
232	$\overline{\text{INC RANGE}}$	11 - 8A 17 - 8B	S D				
234	$\overline{\text{INH. SGN. CH.}}$	5 - 19AB 6 - 19AB 7 - 19AB 8 - 19AB 9 - 19AB	D D S N N				
235	$\overline{\text{INHIBIT FREQ. KB}}$	15 - 1B Disc 162 Disc 169 18 - 1B 19 - 1A	N S S				
236	INPUT LO	23 - 1A 24 - 1A 24 - 3A Disc 116 SK K 1 SK K 3				Relay Switching Board PCB 14 PL K 1	
237	$\overline{\text{INHIBIT DEMOD}}$	14 - 34B 22 - 2A	D S				
238	INPUT HI	24 - 2A SK K 2	D			Relay Switching PCB 14 PL K 2	S
240	$\overline{\text{INPUT RANGE LATCH READ STROBE}}$	14 - 3B 17 - 3A	S D				
241	INPUT RANGE 1	11 - 39A 17 - 43AB 24 - 28A	D S D				
242	INPUT RANGE 2	11 - 40A 17 - 44AB 24 - 29A	D S D				
243	INPUT RANGE 4	11 - 41A 17 - 45AB 24 - 30A	D S D				
244	INT Continued SH I2	4 - 8AB 5 - 8AB 6 - 8AB 7 - 8B	D D D S				

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
244 Cont.	INT	8 - 8AB 9 - 8B	D N				
245	$\overline{\text{INT. BUSY}}$	2 - 7A 3 - 7AB 4 - 7A	D N S				
246	INT DECSH	4 - 6AB 7 - 7A	S D				
247	INTEGRATION TIME 1	2 - 3A 14 - 3A	D S				
248	INTEGRATION TIME 2	2 - 2A 14 - 2A	D S				
249	INT/$\overline{\text{EXT}}$	2 - 5A Disc 4 Disc 97 18 - 5A 19 - 5B 20 - 5A 21 - 5B	D S S S S				
250	$\overline{\text{INT GEN CLOCK}}$	2 - 4A Disc 3 Disc 104 18 - 8A 19 - 8B 20 - 8A 21 - 8B	S D D D D				
251	$\overline{\text{INVALID}}$	14 - 26B Disc 168 Disc 121 18 - 44B 19 - 44B 20 - 44B 21 - 44B SK N 19 SK M 12	S E E E E			Display Board PCB 30 PL N 19 Key Board Display PCB 29 PL M 12	 D D
252	$\overline{\text{INDICATE OVERLOAD}}$	16 - 21B 17 - 21A	D S				
253	INPUT RANGE TOUCH KEY PULSE	14 - 5B 17 - 5A	S D				
254	$\overline{\text{ITERATION CLOCK}}$	4 - 13A 7 - 13AB 8 - 13AB	S D D				

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
255	ITERATE	7 - 41B 8 - 41AB 9 - 41AB	S D N				
256	INTERNAL LATCH STORE DATA $\overline{1}$	14 - 9B 15 - 9AB 16 - 9AB 17 - 9A	S D D D				
257	INTERNAL LATCH STORE DATA $\overline{2}$	14 - 8B 15 - 8AB 16 - 8AB 17 - 8A	S D D D				
258	INTERNAL LATCH STORE DATA 4	14 - 7B 15 - 7AB 16 - 7AB 17 - 7A	S D D D				
259	INTERNAL LATCH STORE DATA 8	14 - 6B 15 - 6AB 16 - 6AB 17 - 6A	S D N D				
260	$\overline{\text{INPUT OVERLOAD}}$	17 - 2B 24 - 32AB	D S				

* S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
264	$\overline{\text{KEYBOARD DIGIT PULSE}}$	15 - 11B 16 - 11A	S D				
265	KEYBOARD DISPLAY DATA 1	15 - 18B Disc 64 SK M 4	S			Keyboard Display PL M 4	D
266	KEYBOARD DISPLAY DATA 2	15 - 5A Disc 60 SK M 2	S			PCB 29 PL M 2	D
267	KEYBOARD DISPLAY DATA 4	15 - 4A Disc 59 SK M 1	S			PCB 29 PL M 1	D
268	KEYBOARD DISPLAY DATA 8	15 - 3A Disc 58 SK M 3	S			PCB 29 PL M 3	D
269	KEYBOARD DISPLAY EXP 1	16 - 23B Disc 77 SK M 9	S			PCB 29 PL M 9	D
270	KEYBOARD DISPLAY EXP 2	16 - 15B Disc 76 SK M 7	S			PCB 29 PL M 7	D
271	KEYBOARD DISPLAY EXP 4	16 - 14B Disc 75 SK M 6	S			PCB 29 PL M 6	D
272	KEYBOARD DISPLAY EXP 8	16 - 13B Disc 74 SK M 8	S			PCB 29 PL M 8	D
273	KEYBOARD EQUIV	13 - 18B 14 - 18AB 15 - 18A	S N D				
274	KEYBOARD FUNCTION 1	15 - 46B 16 - 46A	D S				
275	KEYBOARD FUNCTION 2	15 - 45B 16 - 45A	D S				
276	KEYBOARD FUNCTION 4	15 - 44B 16 - 44A	D S				
277	KEYBOARD STORE ADDRESS 1	13 - 51B 14 - 51AB 15 - 51A	D N S				

* S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
278	KEYBOARD STORE ADDRESS 4	13 - 50B 14 - 50AB 15 - 50A	D N S				
279	KEYBOARD STORE ADDRESS 8	13 - 49B 14 - 49AB 15 - 49A	D N S				
280	KEYBOARD STORE ADDRESS 16	13 - 48B 14 - 48AB 15 - 48A	D N S				
281	KEYBOARD STORE ADDRESS 32	13 - 47B 14 - 47AB 15 - 47A	D N S				
282	KEYBOARD STORE ADDRESS 64	13 - 36B 14 - 36A 15 - 36A	D N S				
283	KEYBOARD STORE ADDRESS 128	13 - 33B 14 - 33B 15 - 33A	D N S				
284	KEYBOARD EXPONENT DECADE	12 - 52B 15 - 35B 16 - 35A	S S D				
285	$\overline{\text{KEYBOARD EGG BOX INHBIT}}$	15 - 10B 16 - 10A	S D				
286	$\overline{\text{KEYBOARD CONTROL TOUCH KEY PULSE}}$	14 - 2B 15 - 2A	S D				
287	KEYBOARD FUNCTION TOUCH KEY PULSE	14 - 16B 15 - 16AB 16 - 16A	S D D				
288	$\overline{\text{KEYBOARD FUNCTION LATCH READ STROBE}}$	14 - 15B 15 - 15AB 16 - 15A	S N D				
289	$\overline{\text{KHz NEON}}$	16 - 4B Disc 72 SK N 23	S			Display Board PCB 30 PL N 23	D

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
290	LATCH STORE DATA OUTPUT $\overline{1}$	14 - 42B 15 - 42AB 16 - 42AB 17 - 42AB 18 - 42AB 19 - 42AB 20 - 42AB 21 - 42AB Disc 96 SK J D7	S N S S E E E E			Front Panel Control PCB 16 Pin 7 PL J D7	D
291	LATCH STORE DATA OUTPUT $\overline{2}$	14 - 41B 15 - 41AB 16 - 41AB 17 - 41AB 18 - 41AB 19 - 41AB 20 - 41AB 21 - 41AB Disc 102 SK J D8	S N S S E E E E			PCB 16 Pin 8 PL J D8	D
292	LATCH STORE DATA OUTPUT $\overline{4}$	14 - 40B 15 - 40AB 16 - 40AB 17 - 40AB 18 - 40AB 19 - 40AB 20 - 40AB 21 - 40AB Disc 95 SK J D9	S N S S E E E E			PCB 16 Pin 9 PL J D9	D
293	LATCH STORE DATA OUTPUT $\overline{8}$	14 - 39B 15 - 39AB 16 - 39AB 17 - 39AB 18 - 39AB 19 - 39AB 20 - 39A 21 - 39B Disc 101 SK J D10	S N N S E E E E			PCB 16 Pin 10 PL J D10	D
294	$\overline{\text{LATCH STORE WRITE}}$	14 - 36B 18 - 35AB 19 - 35AB 20 - 35AB 21 - 35AB	D E E E E				

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	★	1172	★	OTHERS	★
295	$\overline{\text{LH DISPLAY STROBE}}$	13 - 13A Disc 44 Disc 213 20 - 13A 21 - 13A SK N 5	S D D			Display Board PCB 30 PL N 5	 D
296	LH DISPLAY EXPT STROBE	13 - 32B 16 - 32B Disc 127 Disc 200 20 - 49B 21 - 49A	S D D D				
297	$\overline{\text{LH DISPLAY POLARITY STROBE}}$	13 - 16B 16 - 16B 17 - 16A Disc 129 Disc 188 20 - 17B 21 - 17A	S D D D D				
298	LH DISPLAY EXP 1	16 - 46B Disc 82 SK N 10	S			Display Board PCB 30 PL N 10	 D
299	LH DISPLAY EXP 2	16 - 45B Disc 81 SK N 11	S			PCB 30 PL N 11	 D
300	LH DISPLAY EXP 4	16 - 33B Disc 79 SK N 12	S			PCB 30 PL N 12	 D
301	LH DISPLAY EXP 8	16 - 24B Disc 78 SK N 9	S			PCB 30 PL N 9	 D
302	LOAD	4 - 24B 5 - 24AB 6 - 24AB 7 - 24A 8 - 24AB 9 - 24A	D D D S N N				
303	LOAD C	7 - 51B 8 - 51AB 9 - 51AB	S D N				
304	LOCAL DATA BUS $\overline{1}$	5 - 56AB 6 - 56AB 7 - 56AB 8 - 56AB 9 - 56AB 10 - 56AB 11 - 56AB	E E E E N N E				

★ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
305	LOCAL DATA BUS $\overline{2}$	5 - 55A 6 - 55AB 7 - 55AB 8 - 55AB 9 - 55AB 10 - 55AB 11 - 55A	E E E E N N E				
306	LOCAL DATA BUS $\overline{4}$	5 - 54A 6 - 54AB 7 - 54AB 8 - 54AB 9 - 54AB 10 - 54AB 11 - 54A	E E E E N N E				
307	LOCAL DATA BUS $\overline{8}$	5 - 53A 6 - 53AB 7 - 53AB 8 - 53AB 9 - 53AB 10 - 53AB 11 - 53A	E E E E N N E				
308	LOG CONSTANT $\overline{1}$	4 - 49B 5 - 50B	S D				
309	LOG CONSTANT $\overline{2}$	4 - 44B 5 - 45B	S D				
310	LOG CONSTANT $\overline{4}$	4 - 39B 5 - 40B	S D				
311	LOG CONSTANT $\overline{8}$	4 - 34B 5 - 35B	S D				
312	$\overline{\text{LATCHED OVERLOAD}}$	7 - 18B 11 - 6A 17 - 6B	D N S				
313	LOG/LIN TOUCH KEY PULSE	14 - 52B 15 - 52AB 16 - 52AB	S N D				
314	LATCH STORE DATA INPUT 1	14 - 46B 18 - 46AB 19 - 46AB 20 - 46AB 21 - 46AB	D E E E E				
315	LATCH STORE DATA INPUT 2	14 - 45B 18 - 45AB 19 - 45AB 20 - 45AB 21 - 45AB	D E E E E				

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
316	LATCH STORE DATA INPUT 4	14 - 44B 18 - 44A 19 - 44A 20 - 44A 21 - 44A	D E E E E				
317	LATCH STORE DATA INPUT 8	14 - 43B 18 - 43A 19 - 43B 20 - 43A 21 - 43B	D E E E E				
318	$\overline{\text{LOCAL STORE SYNC}}$	12 - 22AB 13 - 22A	S D				
319	LOCAL 500kHz	11 - 23B 12 - 23AB 13 - 23A	D S D				

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
320	MAINS SET	1 - 2AB Disc 2 SK L 13	D			Power Supply Board PCB 26 PL L 13	 S
321	MAINS SET	1 - 1AB 2 - 1AB 3 - 1AB 4 - 1AB 5 - 1AB 6 - 1AB 7 - 1AB 8 - 1AB 9 - 1AB 10 - 1AB 11 - 1AB 12 - 1AB 13 - 1AB 14 - 1AB 17 - 1AB 18 - 1A 19 - 1B 20 - 1A 21 - 1B Disc 1 SK J D17	S D N N N N N N N D N D N D N D D D D			Front Panel Relay Board PCB 17 Pin 27 PL J D17	 D
322	MASTER CMD PULSE	10 - 13B 11 - 13A	S D				
323	MEASURE BIAS	2 - 52AB 3 - 52AB 4 - 52AB 5 - 52AB 6 - 52AB 7 - 52AB 8 - 52AB 9 - 52AB 10 - 52AB 11 - 52A 23 - 31AB	D D N N N D N N N S D				
324	MEASURE DELAY 1	2 - 4B 14 - 5A	D S				
325	MEASURE DELAY 2	2 - 3B 14 - 4A	D S				
326	MODULATE GAIN			10 - 12B 5 - 22A	S D		

* S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
327	$\overline{\text{MOS STORE WRITE}}$	11 - 47B 12 - 47AB 15 - 47B 16 - 47AB 17 - 46AB 18 - 47A 19 - 47A 20 - 47A 21 - 47A Disc 66 SK J C11	S D S N N S S S S			No Connection PL J C11	
328	$\overline{\text{MHz NEON}}$	16 - 3B Disc 71 SK N 22	S			Display Board PCB 30 PL N 22	D
329	$\overline{\text{MOD}}$			10 - 6B 11 - 17A	D S		
330	$\overline{\text{mHz NEON}}$	16 - 1B Disc 69 SK N 20	S			Display Board PCB 30 PL N 20	D
331	MPX ADDRESS 1	4 - 22B 5 - 22AB 6 - 22AB	S D D				
332	MPX ADDRESS 2	5 - 21A 6 - 21A 7 - 21AB 8 - 21AB 9 - 21AB	D D S N N				
333	MPX ADDRESS 4A	5 - 20B 5 - 21B 7 - 20B 9 - 20B	D D S N				
334	MPX ADDRESS 4B	6 - 20B 6 - 21B 7 - 20A 9 - 20A	D D S N				
335	MPX 1 CMD	4 - 22A 7 - 22B 9 - 22B	D S N				
336	MPX STROBE	4 - 18B 5 - 18AB 6 - 18AB	S D D				
337	MOD	14 - 32B Disc 61 SK J B13 SK J D13	S	11 - 14B Disc 22 PL J B13	D	PCB 16 Pin 13 PL J D13	D
338	MODULATE (F)			10 - 14B 5 - 20A 2 - 6A	S D D		

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
339	MOS STORE DATA OUTPUT 1	1 - 56AB 2 - 56A 11 - 56B 12 - 56AB 13 - 56AB 14 - 56AB 15 - 56AB 16 - 56AB 17 - 56AB 18 - 56AB 19 - 56AB 20 - 56AB 21 - 56A Disc 30 SK N 14	D D D S D N D D D D D D D D			Display Board PCB 30- PL N 14	D
340	MOS STORE DATA OUTPUT 2	1 - 55AB 2 - 55A 11 - 55B 12 - 55AB 13 - 55AB 14 - 55AB 15 - 55AB 16 - 55AB 17 - 55AB 18 - 55AB 19 - 55AB 20 - 55AB 21 - 55A Disc 29 SK N 13	D D D S N N D D D D D D D D			Display Board PCB 30 PL N 13	D
341	MOS STORE DATA OUTPUT 4	1 - 54AB 2 - 54A 11 - 54B 12 - 54AB 13 - 54AB 14 - 54AB 15 - 54AB 16 - 54AB 17 - 54AB 18 - 54AB 19 - 54AB 20 - 54AB 21 - 54A Disc 28 SK N 16	D D D S N N D D D D D D D D			PCB 30 PL N 16	D
342	MOS STORE DATA OUTPUT 8 Continued SH M4	1 - 53AB 2 - 53A 11 - 53B 12 - 53AB 13 - 53AB 14 - 53AB 15 - 53AB	D D D S N N D			PCB 30 PL N 15	D

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
342 Cont.	MOS STORE DATA OUTPUT 8	16 - 53AB 17 - 53AB 18 - 53AB 19 - 53AB 20 - 53AB 21 - 53A Disc 27 SK N 15	D D D D D D				
343	MOS STORE DATA INPUT 1	11 - 51B 12 - 51AB 15 - 51B 16 - 51AB 17 - 50AB 18 - 51AB 19 - 51AB 20 - 51AB 21 - 51A Disc 68 SK J C7	S D S S N S S S S			No Connection PL J C7	
344	MOS STORE DATA INPUT 2	11 - 50B 12 - 50AB 15 - 50B 16 - 50AB 17 - 49AB 18 - 50A 19 - 50B 20 - 50A 21 - 50B Disc 48 SK J C8	S D S S N S S S S			No Connection PL J C8	
345	MOS STORE DATA INPUT 4	11 - 49B 12 - 49AB 15 - 49B 16 - 49AB 17 - 48AB 18 - 49A 19 - 49B 20 - 49A 21 - 49B Disc 67 SK J C9	S D S S N S S S S			No Connection PL J C9	
346	MOS STORE DATA INPUT 8	11 - 48B 12 - 48AB 15 - 48B 16 - 48AB 17 - 47AB 18 - 48A 19 - 48B 20 - 48A 21 - 48B Disc 47 SK J C10	S D S S N S S S S			No Connection PL J C10	

✱ S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
347	MEASURE X	11 - 14B 13 - 24B 14 - 24AB 15 - 24AB 16 - 24A	N D S N D				
348	MEASURE Y	11 - 13B 13 - 23B 14 - 23AB 15 - 23AB 16 - 23A Disc 216	N D S N D				

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
349	N CYCLE CLOCK	2 - 5B 3 - 4AB	D S				

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
350	$\overline{\text{OUTPUT COMMAND PULSE}}$	10 - 32B 11 - 32A	S D				
351	$\overline{\text{OUTPUT VOLTS EXPONENT 2 (F)}}$			8 - 20AB 10 - 9A	D S		
352	$\overline{\text{OUTPUT VOLTS EXPONENT 2}}$			10 - 4B 11 - 21A	D S		
353	$\overline{\text{OUTPUT VOLTS EXPONENT 1 (F)}}$			8 - 22AB 10 - 9B	D S		
354	$\overline{\text{OUTPUT VOLTS EXPONENT 1}}$			10 - 5A 11 - 20A	D S		
355	$\overline{\text{OVERLOAD LATCH READ STROBE}}$	14 - 13A 17 - 14A	S D				
356	OUTPUT WAVEFORM			5 - 14AB 6 - 14AB Disc 48	S D		
358	OUTPUT VOLTS EXP STROBE	1 - 43AB Disc 23 Disc 43 13 - 3A	D S				
359	OUTPUT VOLTS EXPONENT 1	1 - 40AB Disc 21 SK J B9	S	11 - 20B Disc 18 PL J B9	D		
360	OUTPUT VOLTS EXPONENT 2	1 - 41AB Disc 22 SK J B10	S	11 - 21B Disc 17 PL J B10	D		
361	OP LATCH STROBE	4 - 20B 5 - 20A 6 - 20A	S D D				
362	OUTPUT OVERLOAD (F)			8 - 8A 10 - 10B	S D		
363	OUTPUT VOLTS CONTROL			2 - 5A 6 - 20A	S D		
364	OUTPUT (BIAS)			7 - 24A R1	S D		
365	OUTPUT (MAIN)			8 - 24AB R2	S D		

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	★	1172	★	OTHERS	★
384	PROGRAMMABLE ATTENUATOR OUTPUT			6 - 16AB 8 - 16A Disc 47	S D		
385	POS A	5 - 15A 6 - 15B 7 - 15AB 8 - 15AB 9 - 15AB	S D D N N				
386	POS B	5 - 15B 6 - 15A 7 - 14AB 8 - 14AB 9 - 14AB	D S D N N				
387	PRE 0°	2 - 10AB 3 - 10AB Disc 38 Disc 105 18 - 16AB 19 - 16AB 20 - 16AB 21 - 16AB	S D D D D D				
388	$\overline{\text{PRE 0°}}$	2 - 11AB Disc 35 SK J B7	D	11 - 16B Disc 21 PL J B7	S		
389	PRE 0° (F)			3 - 8AB T4 Pin 6	S D		
390	$\overline{\text{PRE 0° (F)}}$			3 - 7A T4 Pin 2	S D		
391	$\overline{\text{PRECLOCK}}$	4 - 13B 5 - 13AB 6 - 13AB	S D D				
392	$\overline{\text{PRE 0° PULSE}}$			T4 PIN 1 11 - 5A	S D		
393	PRE 0° PULSE			T4 PIN 5 11 - 6A	S D		

★ S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
402	ROM OUTPUT 1	7 - 43B 8 - 43AB 9 - 43AB 10 - 43AB 11 - 43A	D N N D S				
403	ROM OUTPUT 2	7 - 44B 8 - 44AB 9 - 44AB 10 - 44AB 11 - 44A	D N N D S				
404	ROM OUTPUT 4	7 - 45B 8 - 45AB 9 - 45AB 10 - 45AB 11 - 45A	D N N D S				
405	ROM OUTPUT 8	7 - 46B 8 - 46AB 9 - 46AB 10 - 46AB 11 - 46A	D N N D S				
406	ROM OUTPUT 16	10 - 47AB 11 - 47A	D S				
407	ROM OUTPUT 32	7 - 48B 8 - 48AB 9 - 48AB 10 - 48AB 11 - 48A	D N N D S				
408	ROM OUTPUT 64	7 - 49B 8 - 49AB 9 - 49AB 10 - 49AB 11 - 49A	D N N D S				
409	ROM OUTPUT 128	10 - 50AB 11 - 50A	D S				
410	$\overline{\text{RECALL PULSE}}$	15 - 4B 16 - 4A	S D				
411	$\overline{\text{RECALL BISTABLE}}$	15 - 34B 16 - 34A	S D				
412	$\overline{\text{RADIANS}}$	13 - 2AB 18 - 2A 19 - 2B 20 - 2A 21 - 2B SW1 Disc 119 SK N 8	D D D D D S			Display Board PCB 30 PL N 8	D

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
414	$\overline{\text{REJECT BIAS D/A MARK-SPACE}}$	17 - 51B 23 - 26A	S D				
415	RECYCLE	11 - 7B 12 - 7AB 13 - 7AB 14 - 7A	D N N S				
416	REJECT BIAS	11 - 15B 12 - 15AB 13 - 15AB 14 - 15A	D N N S				
417	REJ BIAS POLARITY	13 - 52A 23 - 28A	S D				
418	REJECT BIAS VOLTS	23 - 2A 24 - 4A	S D				
419	REJECT BIAS D/A MARK-SPACE	17 - 52B 23 - 27A	S D				
420	$\overline{\text{RH DISPLAY STROBE}}$	13 - 14A Disc 45 Disc 186 20 - 14B 21 - 14AB SK N 4	S D D 			Display Board PCB 30 PL N 4	 D
421	$\overline{\text{RH DISPLAY POLARITY STROBE}}$	13 - 17B 16 - 17B Disc 128 Disc 189 20 - 18B 21 - 18A	S D D D				
422	$\overline{\text{REMOTE}}$	14 - 52A Disc 57 Disc 123 18 - 52AB 19 - 52AB 20 - 52AB 21 - 52A	S D D D D				
424	$\overline{\text{RESET OVERLOAD}}$	11 - 9A 17 - 9B	S D				
425	REJECT BIAS D/A RESET	17 - 33A 23 - 25A	S D				
426	$\overline{\text{REJECT BIAS D/A RESET}}$	17 - 33B 23 - 24A	S D				

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
427	$\overline{\text{RESET RANGE}}$	11 - 7A 17 - 7B	S D				
428	ROM ADDRESS 1	10 - 16B 11 - 16A	S D				
429	ROM ADDRESS 2	10 - 16A 11 - 16B	S D				
430	ROM ADDRESS 4	10 - 17B 11 - 17A	S D				
431	ROM ADDRESS 8	10 - 17A 11 - 17B	S D				
432	ROM ADDRESS 16	10 - 18B 11 - 18A	S D				
433	ROM ADDRESS 32	10 - 18A 11 - 18B	S D				
434	ROM ADDRESS 64	10 - 19B 11 - 19A	S D				
435	ROM ADDRESS 128	10 - 19A 11 - 19B	S D				
436	ROM ADDRESS 256	10 - 20A 11 - 20B	S D				
437	ROM ADDRESS 512	10 - 20B 11 - 20A	S D				
438	$\overline{\text{RUN}}$	11 - 26B 12 - 26AB 14 - 26A 15 - 26AB 16 - 26B 17 - 26AB 18 - 26A 19 - 26A 20 - 26A 21 - 26A Disc 94 SK J D16	S N D N N D D D D D			Front Panel Control PCB 16 Pin 16 PL J D16	D
439	REV COUNTER "1"			3 - 15AB 4 - 15A	S D		
440	REV COUNTER "2"			3 - 16AB 4 - 16A	S D		
441	REV COUNTER "4"			3 - 17AB 4 - 17A	S D		

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
442	REV COUNTER "8"			3 - 18AB 4 - 18A	S D		
443	REV COUNTER "10"			3 - 19AB 4 - 19A	S D		
444	REV COUNTER "20"			3 - 20AB 4 - 20A	S D		
445	REV COUNTER "40"			3 - 21AB 4 - 21A	S D		
446	REV COUNTER "80"			3 - 22AB 4 - 22A	S D		
447	REV COUNTER "160"			3 - 23AB 4 - 23A	S D		
448	REV COUNTER "320"			3 - 24AB 4 - 24A	S D		

✱ S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	★	1172	★	OTHERS	★
450	SAMPLE ADD BIAS	17 - 21B Disc 86 SK J B2	S	11 - 4B Disc 27 PL J B2	D		
451	SAMPLE OUTPUT VOLTS	17 - 34A Disc 80 SK J B3	S	11 - 6B Disc 25 PL J B3	D		
452	SAMPLE RAMP	1 - 39AB Disc 20 SK J A7	S	13 - 19AB Disc 2 PL J A7	D		
453	SAMPLE ADD BIAS (F)			2 - 10AB T2 Pin 2	D S		
454	SAMPLE OUTPUT VOLTS (F)			2 - 15AB T3 Pin 2	D S		
455	SAMPLE REJ BIAS	17 - 35A 22 - 21AB 23 - 21AB	S N D				
456	$\overline{\text{SAMPLE REJ BIAS}}$	17 - 35B 22 - 20AB 23 - 20AB	S N D				
457	SET 0° (F)			3 - 4A T5 Pin 2	D S		
458	$\overline{\text{Set 0° (F)}}$			3 - 3A T5 Pin 6	D S		
459	SGN V	4 - 37AB 5 - 37AB 6 - 37AB 7 - 37A	S D D N				
460	$\overline{\text{SGN COS}}$	3 - 32B 4 - 32B 5 - 32B 6 - 32AB 7 - 32A	S N N D N				
461	$\overline{\text{SGN SIN}}$	3 - 32A 4 - 32A 5 - 32A 7 - 32B	S N D N				
462	SYNTHESISER OUTPUT GROUND	E. Tag. SK J A11		12 - 21AB Disc 7 PL J A11			
463	$\overline{\text{SET 0°}}$	2 - 9B 3 - 9AB Disc 34 SK J B4	S D	11 - 3B Disc 28 PL J B4	D		

★ S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTI ATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
464	SIN $\overline{1}$	3 - 51B 4 - 51AB 5 - 51AB	S N D				
465	SIN $\overline{2}$	3 - 46B 4 - 46AB 5 - 46AB	S N D				
466	SIN $\overline{4}$	3 - 41B 4 - 41AB 5 - 41AB	S N D				
467	SIN $\overline{8}$	3 - 36B 4 - 36AB 5 - 36AB	S N D				
468	SIN $\overline{10}$	3 - 50 B 4 - 50AB 5 - 50A	S N D				
469	SIN $\overline{20}$	3 - 45B 4 - 45AB 5 - 45A	S N D				
470	SIN $\overline{40}$	3 - 40B 4 - 40AB 5 - 40A	S N D				
471	SIN $\overline{80}$	3 - 35B 4 - 35AB 5 - 35A	S N D				
472	$\overline{\text{SINE}}$			11 - 24A 10 - 3A	S D		
473	$\overline{\text{SINE}}$ (F)			4 - 7AB 10 - 15A	D S		
474	SINE	14 - 16A Disc 50 SK J B15 SK J D15	S	11 - 24B Disc 14 PL J B15	D	Front Panel Control PCB 16 Pin 15 PL J D15	D
475	SPARE FLAG	7 - 35A Disc 215	D				
476	$\overline{\text{STOP}}$ Continued SH S3	2 - 2B 3 - 2AB 13 - 11B 14 - 11A Disc 165 Disc 120 18 - 13B	D N N S D				

✱ S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	★	1172	★	OTHERS	★
476 Cont.	$\overline{\text{STOP}}$	19 - 13B 20 - 13B 21 - 13B SK M 13	D D D			PCB 29 PL M 13	D
477	STROBE A	5 - 9B 7 - 9B 8 - 9B 9 - 9B	D S N N				
478	STROBE B	6 - 9B 7 - 9A 8 - 9A 9 - 9A	D S N N				
479	SUBROUTINE BUFFER 64	10 - 21B 11 - 21A	S D				
480	SUBROUTINE BUFFER 128	10 - 22B 11 - 22A	S D				
481	SUBROUTINE BUFFER 256	10 - 23B 11 - 23A	S D				
482	SUBROUTINE BUFFER 512	10 - 24B 11 - 24A	S D				
483	SWEEP CMD 1	11 - 9B 12 - 9AB 13 - 9AB 14 - 9A	D N N S				
484	SWEEP CMD 2	11 - 8B 12 - 8AB 13 - 8AB 14 - 8A	D N N S				
485	$\overline{\text{SWEEP MODE STROBE}}$	15 - 21B 16 - 21A	D S				
486	$\overline{\text{SET SWEEP OFF}}$	11 - 10B 12 - 10AB 13 - 10AB 14 - 10A Disc 161 Disc 212 18 - 9A 19 - 9A 20 - 9A 21 - 9A	S N N D D D D D				
487	SINGLE	11 - 6B 12 - 6AB 13 - 6AB 14 - 6A	D N N S				

★ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	★	1172	★	OTHERS	★
488	$\overline{\text{SYNCH FLAG}}$	7 - 10B 11 - 2B 18 - 3A Disc 163 SK J C16	D N S			No connection PL J C16	
489	SYNTHESISER OUTPUT (See opposite page)	2 - 13A Disc 10 SK J A10	D	12 - 20AB Disc 8 PL J A10	S		
490	$\overline{\text{STORE SYNC}}$	13 - 22B 14 - 22AB 15 - 22AB 16 - 22AB 17 - 22AB 18 - 22AB 19 - 22AB 20 - 22A 21 - 22B Disc 92 SK N 6	S N D N D D D D D			Display Board PCB 30 PL N 6	D
491	STORE COMMAND PULSE	10 - 12B 11 - 12A	S D				
492	SYSTEM FEEDBACK	10 - 37A 11 - 37B	D S				
493	STOP CODE B	4 - 23B 5 - 23AB 6 - 23AB 7 - 22A 9 - 22A	D N N S N				
494	STOP CODE A	4 - 23A 7 - 23AB 8 - 23AB 9 - 23AB	D S N N				
495	STORE ADDRESS 16	10 - 32A 11 - 32B	S D				
496	STORE ADDRESS 8	10 - 21A 11 - 21B	S D				
497	SQUARE	14 - 17A Disc 51 SK J B14 SK J D14	S	11 - 23B Disc 15 PL J B14	D	Front Panel Control PCB 16 Pin 14 PL J D14	D
498	$\overline{\text{SQUARE}}$			11 - 23A 10 - 3B	S D		

★ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
499	SQUARE (F)			4 - 8AB 10 - 15B	D S		
500	SINE (F)			5 - 8AB 6 - 8AB 8 - 18A 10 - 16B	D N D S		
501	SET 0°			11 - 7A T5 Pin 1	S D		
502	SET 0° RETURN			11 - 8A T5 Pin 5	N S		
503	START RAMP	1 - 13AB Disc 9 SK J A15	S	13 - 1AB Disc 4 PL J A15	D		
504	STATE 2	10 - 41AB					
505	STATE 1	10 - 42AB					
506	SWEEP MODE	11 - 12B 14 - 21B 15 - 21A	D S D				
507	$\overline{\text{SAMPLE ADD BIAS}}$			11 - 1A T2 PIN 1	S D		
508	$\overline{\text{SAMPLE ADD BIAS RETURN}}$			11 - 2A T2 PIN 5	S D		
509	$\overline{\text{SAMPLE OUTPUT VOLTS}}$			11 - 3A T3 PIN 1	S D		
510	$\overline{\text{SAMPLE OUTPUT VOLTS RETURN}}$			11 - 4A T3 PIN 5	S D		
489	SYNTHESISER OUTPUT (New design— Bd 51)	1—8 2—13A	S D				

✱ S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
521	$\overline{\text{TIME}}$	2 - 42AB 3 - 42AB 4 - 42AB 5 - 42AB 6 - 42AB 7 - 42AB 8 - 42AB	S N D N N N N				
522	T1	11 - 46B 12 - 46AB 13 - 46A	D S D				
523	T2	11 - 45B 12 - 45AB 13 - 45A	D S D				
524	T3	11 - 44B 12 - 44AB 13 - 44A	D S D				
525	T4	11 - 43B 12 - 43AB 13 - 43A	D S D				
526	T5	11 - 42B 12 - 42AB 13 - 42A	D S D				
527	T6	11 - 41B 12 - 41AB 13 - 41A	D S D				
528	T7	11 - 40B 12 - 40AB 13 - 40A	D S D				
529	T8	11 - 39B 12 - 39AB 13 - 39A	D S D				
530	T8 BUFFERED	13 - 39B 14 - 39A	S D				
531	T7 BUFFERED	13 - 40B 14 - 40A	S D				
532	T6 BUFFERED	13 - 41B 14 - 41A	S D				
533	T5 BUFFERED	13 - 42B 14 - 42A	S D				
534	T4 BUFFERED	13 - 43B 14 - 43A	S D				

* S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
535	T3 BUFFERED	13 - 44B 14 - 44A	S D				
536	T2 BUFFERED	13 - 45B 14 - 45A	S D				
537	T1 BUFFERED	13 - 46B 14 - 46A	S D				
538	T11 (EQUIV TIMING)	12 - 37AB 13 - 37A	S D				
539	T12 (EQUIV TIMING)	12 - 36AB 13 - 36A	S D				
540	T13 (EQUIV TIMING)	12 - 35AB 13 - 35A	S D				
541	$\overline{\text{TRIG MAINS SET}}$	12 - 24AB 18 - 18AB 19 - 18AB 20 - 18A 21 - 18B Disc 85 SK L 12	S S S S S			Power Supply Board PCB 26 PL L 12	D
542	T9 (DIGIT CONTROL)	1 - 34AB 12 - 34AB 13 - 34A Disc 24 Disc 199 20 - 48B 21 - 48A	D S D D D				
543	T10 (DIGIT CONTROL)	1 - 32AB 12 - 33AB 13 - 33A Disc 130 Disc 201 20 - 50B 21 - 50A	D S D D D				
544	$\overline{\text{TIMER/ITERATION OFLO}}$	4 - 26B 5 - 26AB 6 - 26AB 7 - 26AB 8 - 26A	D N N N S				

* S = SOURCE D = DESTINATION N = UNUSED

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
545	T9 DELAYED	13 - 38B 14 - 38AB 15 - 38AB 16 - 38AB 17 - 38A Disc 56 SK M 11	S N D D D			Keyboard Display PCB 29 PL M 11	 D
546	T10 DELAYED	13 - 37B 14 - 37AB 15 - 37AB 16 - 37AB 17 - 37A Disc 55 SK M 10 SK J C15	S N D D D			PCB 29 PL M 10 PL J C15	 D
547	TIMER CLOCK	4 - 47AB 5 - 47AB 6 - 47AB 7 - 47AB 8 - 47AB	S N N N D				

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
550	$\overline{\text{UPDATE}}$	3 - 39AB 4 - 39A	D S				
551	$\overline{\text{UP}}$/DOWN	7 - 50B 8 - 50AB 9 - 50AB	S D N				

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
553	$\overline{\text{VOLTS NEON}}$	16 - 2B Disc 70 SK N 21	S			Display Board PCB 30 PL N 21	D
554	$\overline{\text{VOLTS}}$ (KEYBOARD)	12 - 38B 15 - 34A	D S				
555	V TO F	4 - 56AB 24 - 31A	D S				

* S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
560	WAVEFORM POLARITY +VE			3 - 10A 4 - 16B 5 - 16A	S N D		
561	WAVEFORM POLARITY -VE			3 - 12A 3 - 13B 4 - 13AB 5 - 12AB	S N N D		
562	WAVEFORM +VE			4 - 10AB 5 - 10A	S D		
563	WAVEFORM -VE			4 - 3AB 5 - 3A	S D		

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
570	X/$\overline{Y}$ FLAG	11 - 22B SK K 15	D S			R.T. Board PCB 15 PL K 15	
571	X/$\overline{Y}$ OUTPUT (A)	11 - 24B 22 - 1AB SK K 14	S D D			R.T. Board PCB 15 PL K 14	
572	X/$\overline{Y}$ OUTPUT (B)	11 - 42A 7 - 41A	S D				
573	X1	23 - 9A 24 - 11A	S D				
574	X1.11	23 - 8A 24 - 10A	S D				
575	X1.57	23 - 7A 24 - 9A	S D				
576	ZERO STORE DECADE	10 - 37B 11 - 37A	S D				
577	ZERO ARITH DECADE	10 - 33A 11 - 33B	S D				

* S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
590	1/1000	4 - 24A 7 - 24B 9 - 24B	D S N				
591	1 - 9 TOUCH KEY PULSE	14 - 11B 15 - 11A	S D				
592	0 TOUCH KEY PULSE	14 - 10B 15 - 10A	S D				
593	$\overline{1184}$ FITTED	14 - 21A Disc 167 Disc 209 22 - 8AB	D S				
594	1184 -15V	22 - 11AB Disc 106 SK L 16				Power Supply Board PCB 26 PL L 16	
595	1184 0V	22 - 12AB Disc 107 SK L 18				Power Supply Board PCB 26 PL L 18	
596	1184 +15V	22 - 13AB Disc 108 SK L 17				Power Supply Board PCB 26 PL L 17	
597	+5V	See Circuit 46		10 - 2B 11 - 15AB 12 - 9AB 13 - 9A Disc 26 PL J A2 PL J D2		Capacitor Board PCB 35 Pin 7 SK J A2 SK J D2	
598	10Hz	1 - 10AB Disc 8 Disc 53 14 - 34A Disc 91 17 - 15AB 18 - 15AB 19 - 15AB 20 - 15AB 21 - 15A	S N D D D D D				

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	*	1172	*	OTHERS	*
599	100Hz	1 - 19AB 2 - 19AB 3 - 19AB 4 - 19A Disc 37 Disc 111 SK K 16	S D N D			Relay Timing Board PCB 15 PL K 16	 D
600	1kHz	1 - 18AB 2 - 18AB 3 - 18AB 4 - 18A Disc 13 SK J A14	S D N D				
601	10kHz	1 - 17AB 2 - 17AB 3 - 17AB 4 - 17A Disc 12 SK J A13	S D N D				
602	$\overline{\text{10kHz RANGE}}$ (F)			4 - 14A 3 - 14AB	S D		
603	10kHz RANGE			11 - 22A 10 - 4A	S D		
604	10kHz RANGE (F)			4 - 12AB 10 - 14A	D S		
605	$\overline{\text{10kHz RANGE}}$	2 - 12AB Disc 36 SK J B11	S	11 - 22B Disc 16 PL J B11	D		
606	100kHz	1 - 16AB 2 - 16AB 3 - 16AB 4 - 16A Disc 11 SK J A12 SK L 11	S N N D	11 - 17B Disc 20 PL J A12		Power Supply Board PCB 26 PL L 11	
607	200kHz	1 - 11AB 2 - 14A	S D				
608	500kHz	13 - 21B 18 - 21AB 19 - 21AB 20 - 21AB 21 - 21A Disc 52 SK J D6	S D D D D			Front Panel Relay Board PCB 17 Pin 26 PL J D6	 D

* S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	★	1172	★	OTHERS	★
609	1MHz	1 - 15AB 2 - 15AB 3 - 15AB 4 - 15A	S N N D				
610	1MHz (STORE)	11 - 11B 12 - 12A	S S				
611	2MHz	1 - 25AB 2 - 25AB 3 - 25AB 4 - 25AB 5 - 25AB 6 - 25AB 7 - 25AB 8 - 25AB 9 - 25AB 10 - 25AB 11 - 25AB 12 - 25AB 13 - 25AB 14 - 25AB 15 - 25AB 16 - 25AB 17 - 25AB 18 - 25A 19 - 25B 20 - 25A 21 - 25B 24 - 27A Disc 39 SK J D11	S D N D N N N N N D D D D N D N D D D D D D			Front Panel Control PCB 16 Pin 11 PL J D11	D
612	$\overline{\geq 10MHz}$	1 - 37AB Disc 19 Disc 89 18 - 4A 19 - 4B 20 - 4A 21 - 4B	D S S S S				
613	10MHz EXP 1	2 - 9A Disc 7 SK J C12	S			No Connection PL J C12	
614	10MHz EXP 2	2 - 8A Disc 6 SK J C13	S			No Connection PL J C13	
615	10MHz GROUND	1 - 22AB Disc 15 SK J A16	S	12 - 22AB Disc 6 PL J A16	D		

★ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
616	10MHz	1 - 20AB 2 - 21AB 3 - 21AB 4 - 21A	S N N D				
617	10MHz HI	1 - 21AB Disc 14 SK J A17	D	12 - 23A Disc 5 PL J A17	S		
618	$\overline{\text{10MHz UNIT}}$ OR $\overline{1174}$ (1MHz)	16 - 32A Disc 65 SK J C4	D			No Connection PL J C4	
619	10.2 - 12MHz GROUND	1 - 24AB Disc 17 SK J A5		12 - 5AB Disc 11 PL J A5			
620	10.2 - 12MHz HI	1 - 23AB Disc 16 SK J A6	D	12 - 6AB Disc 10 PL J A6	S		
621	OV GENERATOR			Disc 55 T3 Pin 6 T2 Pin 6 2 - 16AB 3 - 9A 4 - 9AB 5 - 9AB 6 - 9AB 6 - 10AB 7 - 9AB 7 - 10AB 8 - 9AB 8 - 10AB 9 - 7B 9 - 9AB 9 - 10AB 9 - 11AB 10 - 8AB Disc 51 Disc 53	D D D D D D D D N D N D S S S D		
622	-1.5V GENERATOR			2 - 23A 3 - 2A 4 - 2AB 5 - 2A 7 - 2AB 8 - 2AB 9 - 2A 10 - 11B	D D D D D D S D		
623	+1.5V GENERATOR			2 - 2A 5 - 23A 9 - 23A	D D S		

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
624	+3.5V GENERATOR			2 - 24A 3 - 1A 4 - 1AB 5 - 1A 7 - 1AB 8 - 1AB 9 - 1A 10 - 11A	D D D D D D S D		
625	-5.8V GENERATOR			2 - 1A 5 - 24A 9 - 24A C12	D D S		
626	-15V GENERATOR			2 - 14AB 4 - 11AB 5 - 11AB 6 - 11AB 7 - 11AB 8 - 11AB 9 - 11A C9	D D D D D D S		
627	+15V GENERATOR			2 - 21A 4 - 4AB 5 - 4A 6 - 4AB 7 - 4AB 8 - 4AB 9 - 4A	D D D D D D S		
628	-16V	See Circuit 47		12 - 15AB 13 - 15AB Disc 3 PL J A4	D D	Pinboard C12+ SK J A4	
629	+18V	See Circuit 47		11 - 1B Disc 40 Disc 30 12 - 7AB 13 - 7A PL J A1			
630	-25V GENERATOR			2 - 22A 6 - 3AB 7 - 3AB 8 - 3AB 9 - 3A	D N D D S		

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
631	+25V GENERATOR			6 - 21AB 7 - 21AB 8 - 21AB 9 - 21A C10	D D D S		
632	+5V +18V -16V -11V 0V	See Circuit Diagrams 46, 47 & 48					

✱ S = SOURCE D = DESTINATION N = UNUSED
E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
640		1 - 3AB					
641		1 - 4AB					
642		1 - 12AB					
643		1 - 38AB					
644		1 - 42AB					
645	SIN/COS SET 0°	3 - 14A 2 - 14B	S D				
646		7 - 34B 8 - 34AB 9 - 34AB					
647		7 - 35B 8 - 35AB 9 - 35AB					
648		7 - 36B 8 - 36AB 9 - 36AB					
649		7 - 37B 8 - 37A					
650		18 - 3B 19 - 3A 20 - 3A 21 - 3A					
651		18 - 4B 19 - 4A Disc 211					
652		18 - 5B 19 - 5A Disc 171					
653		18 - 6B 19 - 6B 20 - 6B 21 - 6B Disc 134					
654		18 - 7B 19 - 7A Disc 172					
655		18 - 8B 19 - 8A Disc 173					

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
656		18 - 13A 19 - 13A Disc 217					
657		18 - 14AB 19 - 14AB 20 - 14A Disc 132					
658		18 - 25B 19 - 25A Disc 174					
659		18 - 32B 19 - 32A Disc 175					
660		18 - 33AB 19 - 33AB 20 - 33A Disc 131					
661		18 - 48B 19 - 48A Disc 177					
662		18 - 49B 19 - 49A Disc 178					
663		19 - 3B 20 - 3B 21 - 3B Disc 124					
664		19 - 20B 20 - 20B 21 - 20B Disc 125					
665		19 - 23B 20 - 23B 21 - 23B Disc 126					
666		20 - 1B 21 - 1A Disc 180					
667		20 - 2B 21 - 2A Disc 181					

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170 -	✱	1172	✱	OTHERS	✱
668		20 - 4B 21 - 4A Disc 182					
669		20 - 5B 21 - 5A Disc 183					
670		20 - 7B 21 - 7A Disc 184					
671		20 - 8B 21 - 8A Disc 185					
672		20 - 19B 21 - 19A Disc 190					
673		20 - 22B 21 - 22A Disc 192					
674		20 - 24B 21 - 24AB Disc 193					
675	0V and E TAG	20 – 25B 21 – 25A Disc 194 Disc 157					
676		20 - 39B 21 - 39A Disc 197					
677	$\overline{\text{HET ON}}$	20 – 43B 21 – 43A Disc 198 Disc 179 Disc 214					
678		21 - 15B Disc 187					
679		21 - 21B Disc 191					
680		21 - 51B Disc 202					
681		21 - 52B Disc 203					

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

No.	SIGNAL TITLE	TERMINALS					
		1170	✱	1172	✱	OTHERS	✱
682		21 - 53B Disc 204					
683		21 - 54B Disc 205					
684		21 - 55B Disc 206					
685		21 - 56B Disc 207					
686				10 - 1A Disc 13			
687				10 - 1B Disc 12			
688		1 - 14AB					
689		1 - 36AB					

✱ S = SOURCE D = DESTINATION N = UNUSED

E = SOURCE/DESTINATION

MP MASTER
MA20021